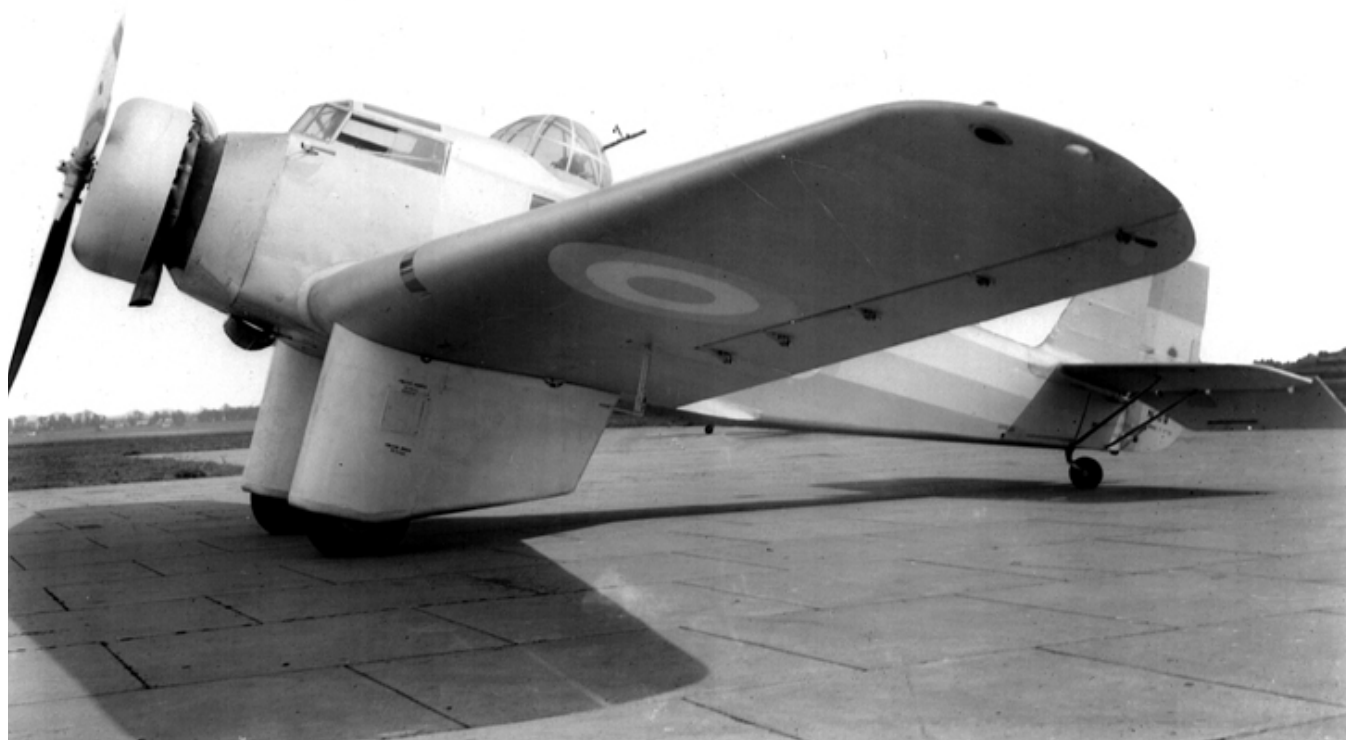


small air forces observer

vol. 39 no.1 (153)
July 2015

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Argentine Bombi
Exotic Birds Part 3
Export Mirage: Part 2
Moroccan Gooney Birds
The PLAAF in the Korean War
Georgia Air Force Insignia 1918-1921

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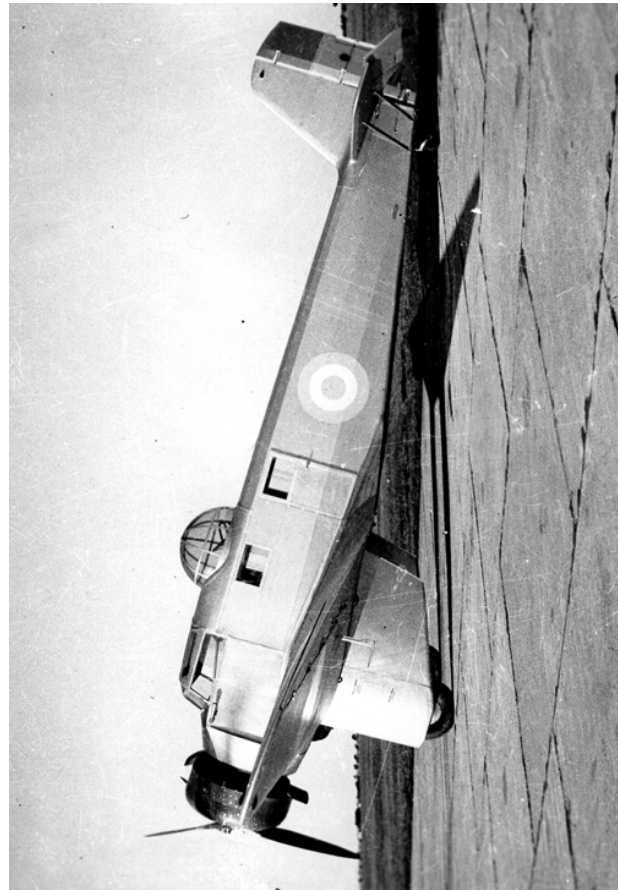
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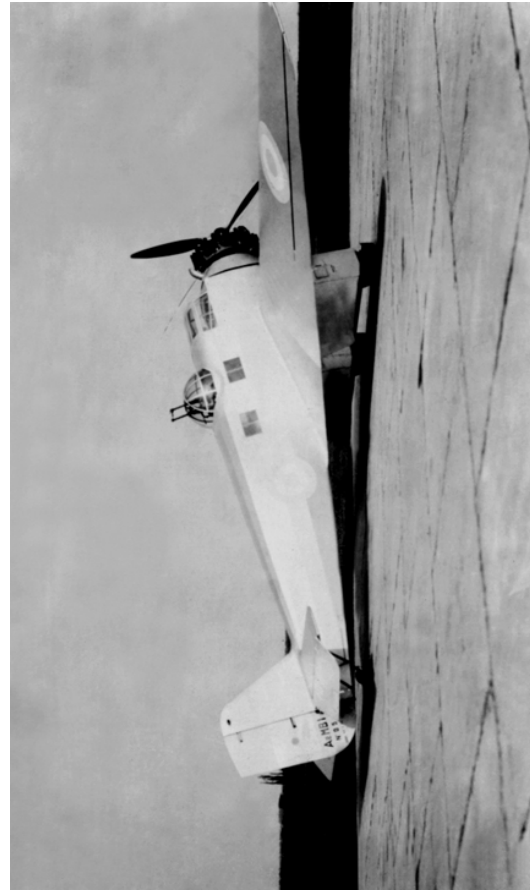
5. Accident of the 201, note the turret installed, the upward opening door, and new canopy



6. The turret is clearly visible on this view of the plane



7. A series production Ae.M.B.1



8. A Bombi with the two Madsen machineguns in the retractable turret

SMALL AIR FORCES OBSERVER

The Journal of the Small Air Forces Clearinghouse

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Terry; Barnes	

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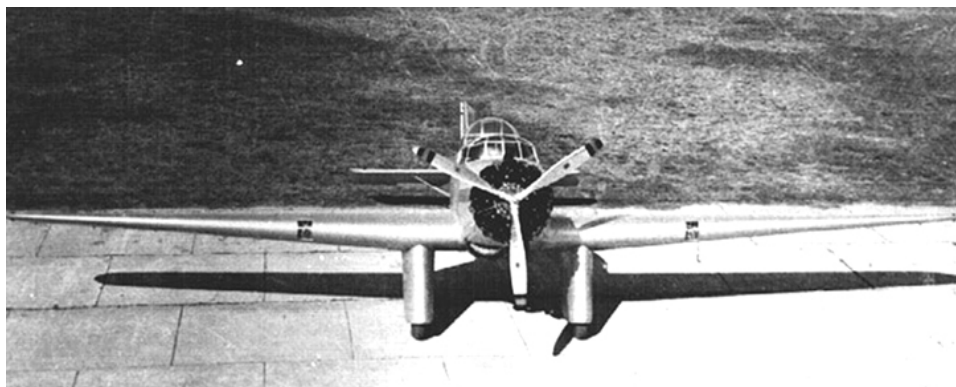
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COVER COMMENTS: The story of the first bomber designed and built in Argentina, the Ae.M.B. begins on page 5. The cover photo shows a Bombi with the Madsen machineguns installed in the turret (author)



Argentine Ae.M.B. Bombi

AUSTRALIA

AUSTRALIAN PLASTIC MODELLERS ASSOCIATION

(APMA, PO Box 51, Strathfield, NSW 2135; 4 issues airmail A\$40. International payment is best handled via Paypal at iansharyn@bigpond.com.au). Web Site: www.apma.org. All articles have b&w or color photos and excellent scale drawings.

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1-15 (36 pages) "Trumpeter's Less Than Perfect Storm" 13 pages on building the 1/48-scale Whirlwind fighter inc. 7 photos of completed model, 5 photos of the a/c, 2 profile drawings, and a scale 5-view drawing. "FAA Maritime Reconnaissance Canberra" 3 pages inc. one photo and a profile drawing. "Under Two Flags" 6 pages on the seaplane tender Zmaj in Yugoslav and German service (Drache) inc. 11 photos, a 1/350-scale drawing, and 2 profiles (Yugoslav Naval Gypsy Moth & German Fl 286).

AUSTRIA

ÖFH NACHRICHTEN (Österreichische Flugzug Historiker, Pfenninggeldf 18/2/14, A-1160 Wien. Write for free sample.

1/15" (44 pages) "Zivilluftfahrt 1919/1920: Das erste Luftfahrzeugregister Österreichs" 8 pages inc. 3 photos. "Hansa Brandenburg C.I in der Tschechoslowakei" 5 pages inc. 10 photos. "Polnischen Junkers F-13 im Luftverkehr nach Österreich 1925-35" 6 pages inc. 9 photos. "Der Fall Wonnebayer" 2 pages inc. 4 photos of Austrian CR 30 & Cr 32"

AVIONS: Toute l'Aéronautique et son Histoire (Lela Presse, 29 rue Paul Bert, 62230 Outreau, France. 71 euro for 6 issues). Website: www.avions-bateaux.com. E-mail: contact@avions-bateaux.com.

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3-view drawing (Fw 190A-8). "Racing Mustangs: 2^e partie" 20 pages inc. 36 photos. "Gabriel Hebert et Robert Nast: Les deux as caches de l'aviation d'Orient" 10 pages inc. 21 photos, one map, and 2 color profile drawings (Spad VII & Nieuport XXI) "McDonnell XP-67: Part 1" 18 pages on the design and development of the XP-67 inc. 30 photos, many drawings of early design projects, a color 3-view drawing, and a 2-page multi-view scale drawing. "Le Toupolev Tu-95 Bear et ses dérivés" 13 pages inc. 16 photos of the civil Tu-114 and 11 photos of the AEW Tu-126. "A" "Les Savoia Marchetti SM.79 en Yougoslavie: Part 1" 12 pages inc. 22 photos and 4 color profile drawings.

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GERMANY

FLIEGER REVUE X (Verlag Fliegerrevue, Herrn Detlef Billig, Oranienbamm 48, D-13469 Berlin. 4 issues per year, \$66 surface. Payment by check drawn on German bank)

#51 (114 pages) "Junkers G 23/24 der getarnten Luft Hansa" 10 pages on Swiss Ju 23/24 inc. 14 photos and a fleet list. "Fiat CR.20" 18 pages inc. 35 photos [Italy (17); Lithuania (2); Austria (11); Poland (2); Hungary (2); Spain (1)]. "B-24 Liberator" 20 pages inc. 21 photos and 7 color profiles [USAAF (5) & RAF (2)]. "MiG-15: Teil 1" 26 pages inc. 45 photos and 2 tables (a/c shot down by MiG-15s during peace time & list of MiG-15 aces). "Die Marineversion der VFW 614" 16 pages inc. 15 photos and 2

color profiles (US Coast Guard & Luftwaffe). "Die A-26 Invader aus Avignon" 5 pages on restoration inc. 10 photos.

FINNISH SWEDISH SIG, c/o Nils R. Treichel, Gustav-Adolf-Str.16, 27404 Zeven, Germany. Entirely in English. Available on the Internet from nrtreichel@vr-web.de.

#34 "Swedish F13 Air Ambulance" 2 pages inc. 3-view. "Building Blenheims" 4 pages of text.

IPMS Deutschland Journal. Website: ipmsdeutschland.de. All color. Subscription: Europe 36 €, others 40 € **47/3** 2014 (46 pages). Nothing of small-air-force interest.

ITALY

JP4 Menslie di Aeronautica e Spazio. Via XX Settembre, 60-50129 Firenze, Italy. Email: jp4@dueservice.com. Website: www.ediservice.it.

Gennaio 2015 (100 pages) Color photos: Peru Boeing 737-500 & Mi-171Sh; UN Bombardier CRJ200R; and Vietnam Airbus DS C295. "Sukhoi Su-30 i fratelli rivali" 6 pages inc. 8 photos. "Airshow China 2014" 4 pages inc. 12 photos. "Un Kamikaze a Roma" 2 pages on Ki-15 J-BAAL visit to Rome in 1937 inc. 8 photos.

Febbraio 2015 (100 pages) Color photos: Australia C-27J; Algeria ATR 72-600; Brazil C-1A Trader; Finland Valmet L-90TP; Japan EC 135; Iraq F-16; Netherlands AB 410 SAR; Trinidad & Tobago AW 139; and Thailand Dirigible. "Operation Guardian Falcon" 6 pages on Belgian F-16 in Afghanistan inc. 5 photos. "Livree speciali per la JASDF" 4 pages on special color schemes with 11 photos (F-15, Mitsubishi F-2, Kawasaki OH-1 & T-4, AH-1S Cobra, and CH-47J). "Incidenti Militari" ½ page inc. photo of Sri Lanka An-32B.

Marzo 2015 (100 pages) Color photos Chile C-130H '998'; Philippines AW109E; Iran B92 Boran; Israel Aeromacchi M-34B; & Yemen MiG-29. "50° Stormo: la prima linea dell'AM" 6 pages on Italian Tornados inc. 7 photos "Il 7° Vega" 8 pages on Italian AH129 inc. 12 photos.

The Argentine Bomber

Santiago Rivas

The FMA Ae.M.B. Bombi was the first and only bomber developed and serial built in Latin America. It was also one of the first works undertaken by the Fábrica Militar de Aviones (FMA), and it served until the arrival in Argentina of the Avro Lancaster.

A local designs generation

The Fábrica Militar de Aviones (FMA) was founded in 1927 in a suburb of the city of Córdoba, with the intention of replacing the imported planes by aircraft locally designed to equip the Argentine military aviation. At first, aircraft were built under licence: Avro 504 and Dewoitine D.21, but the FMA immediately began the development of local designs. The first was the Ae.C.1. It was followed by other models including three Ae.T.1 transport. All these were small low-wing monoplanes of similar design. Only the Ae.T.1 was different due to its size, which made it possible to carry five passengers and two pilots. It could also be transformed into a light bomber.

A bomber

The limited attack capacity of the Ae.T.1 was never used because of the development of a bigger and better bomber - the Ae.M.B.1. This light bomber was intended to replace the old Breguet XIX biplanes that had been in service since the end of the twenties. Design of the Ae.M.B.1 began in 1932 with the construction of the first prototype starting the following year. However construction was delayed until 1934 because of the lack of some material such as aluminium tubes. While work was advancing, the construction of an Ae.T.2, a transport version with a Wright Cyclone R-1820E1, was also progressing. Ultimately, all were built as Ae.M.B.1, although it's probably some, like the one serialled '212', was delivered as a transport and general purpose aircraft without armament.

At the beginning of 1935, the first prototype was ready to fly. It was an open-cockpit low-wing monoplane with cantilever wooden wings, fixed landing gear, and a Wright Cyclone 6R-1820F3 engine of 715hp. The fuselage was built with chromomolybdenum tubes with the cockpit and cabin areas covered by duraluminium. The tail, wing, and elevators were covered with fabric. The crew consisted of a pilot, a bomber, a gunner, and a radio

operator, but a mechanic could also be carried. For observation missions, it could carry two observers. There was a ventral opening for the gunner and a vertical camera could be installed.

On 9 June 1935, the prototype flew for the first time. Further flight tests led to some modifications: a NACA ring was added to the engine, and later a covered landing gear. Defensive armament was installed - a open dorsal position with two Lewis .303 machineguns on a mounting taken from a Breguet XIX.

Tests showed it was a good plane, and modifications continued: The vertical tail was enlarged to improve lateral control, and the wing-fuselage junction was modified to improve access to the cabin which was made through a small door on the port side. The NACA ring was replaced by a large cowling and the landing gear covers were enlarged. At the end of 1935, the Ae.M.B.1 was officially presented at the Military Aviation School, Base Aérea Militar (BAM) El Palomar in Buenos Aires.

With a last series of modification, the plane arrived at the definitive configuration: The cockpit was enclosed and new armament was installed comprising a dorsal turret armed with two 7.65mm Madsen machineguns, and another Madsen machinegun was installed in the ventral position. A bomb load of 450kg could be carried under the fuselage. On the series production planes, the fuselage cover would be change to fabric to reduce weight. In 1935, while tests were still underway, the FMA began series production of fourteen examples.

The Bombi enters service

Deliveries to the 2º División de Material Aeronáutico del Ejército (Army Aeronautical Material 2nd Division) began on 6 March 1936, and included the prototype, '201', and aircraft '202' to '209'. These were followed on 10 April by '210' and '211', and the last planes '212' to '215' were delivered on 20 May. Initially, six were sent to the Grupo de Bombardeo of the Regimiento Aéreo 3 at

BAM Los Tamarindos, Mendoza. The others were in service with the Regimiento Aéreo 1 at BAM El Palomar.

On 2 May at 11:45, the first operational accident took place. After a normal landing at BAM Los Tamarindos by Major Alfredo Perez Aquino, while making a left turn while taxiing, '207' lost a wheel. The same happened to '214' on 17 June. On 20 May, during acceptance trials, '203' manned by Sergeant Julio Arrieta had an accident on the runway at FMA because of the collapse of the landing gear.

Controlling the bomber, named "Bombi" by the crews, in flight was hard, mainly due to poor lateral control caused by the air flow around the dorsal turret. Because of this, in some airplanes, the turret was modified so it could be lowered into the cabin when not in use. Problems with the landing gear continued and the crews complained about the low speed of the plane.

On 9 July 1936, while taking off from El Palomar, '210' was lost in an accident, although the crew escaped safely. Problems with the landing gear continued when on 21 September '207' lost a wheel while landing. The same happened to '203', '209', '212', and '214'. On 21 December, '207' crashed near Despeñaderos, Córdoba. The pilot, co-pilot, two observers, and the radio operator parachuted safely, but the mechanic died on the plane. He was the only crew member killed throughout the service life of the Bombi.

Shortly before that, on 17 December, Madsen 11.25mm and 7.65mm machineguns were purchased for the Ae.M.B.1s. The 11.25mm ones were used for the ventral position. The others equipped the dorsal turret, unarmed until then.

In the following year, while all of bombers were serving with the Grupo de Observación y Bombardeo of Regimiento 1, the FMA was running tests on a new landing gear. Other work carried on by FMA was testing a 12.7mm Colt machinegun in the cowling, the study of Bofors bomb racks for 20 to 200 pound bombs, the adaptation of the Calderoni racks for 48 four-pound incendiary bombs, and studies of a ventral door, closed in normal conditions, for the bomb sight and the ventral machine gun. Also the exhaust collector and the oil radiator were changed, and a new longer cowling was tested, although the Bombi sometimes flew without it.

The accidents continued when, on 12 January 1937, the landing gear of '206' collapsed. Because of this situation, on 1 March, Orden Reservada 3 (Reserved Order) was issued and the Ae.M.B.1s were grounded until the problem of the landing gear was solved.

On 5 June 1937, the prototype '201' took off from El Palomar heading for Paraná, in Entre Ríos province, with a stop at Tortugas. The plane was crewed by sargento 1º Pelliza, sergeants Algarate and Abrallay, and cabo 1º Maciel. Approaching Tortugas, technical troubles caused them to land at the town of Galvez where they refuelled and took off at 17:10. They arrived over Regimiento 2, at BAM General Urquiza, in Paraná after sunset. Trying to land in poor visibility, they crashed at 18:30, 500m short of the runway. The engine ended up some meters from the plane and the crew was injured. The prototype was written off, reducing the quantity of Bombis to twelve.

On the 9 July Independence Day celebrations, there was a flypast with 112 planes of the Army. All the Bombis took part - the only time they flew in a formation of twelve planes.

From Ae.M.B.1 to Ae.M.B.2

Because of all the accidents, on 5 February 1938, modifications to the planes were authorised, leading to the change of the designation from Ae.M.B.1 to Ae.M.B.2. To fix the problem with the landing gear, changes were made including to the covers. The fuel tanks were modified and an emergency door was installed. The turret was eliminated to fix the problem of the poor lateral control and because of damage caused by the recoil of the machinegun. This left the ventral 11.25mm machinegun as the sole defensive weapon. The entry door was enlarged and became rectangular, opening to side instead of upwards. This made possible a faster abandonment of the plane during an emergency.

During 1938, nine planes of Regimiento 1 de Observación y Bombardeo at El Palomar were modified, but only '208', '209', '211', '212', and '213' were in service. On 8 October 1938, BAM Villa Mercedes was created at the city of the same name in San Luis province. Bombis '208', '209', '211', '212', and '213' were sent there one year later to be part of the Grupo de Observación. '212' was transferred

directly from FMA. '204' and '214' was at the workshop being modified.

At the beginning of 1939, '215' was sent to Regimiento 2 de Caza at Paraná, a unit also receiving the new Curtiss Hawk III and Hawk 75-O. However, the Bombi only served there a short time before going to Grupo de Observación. Grupo de Bombardeo Liviano of Regimiento 3 at Mendoza, This unit also had '202', '203', '205', and '206', but '206' was later sent to Villa Mercedes.

On 7 September 1939, the bad luck continued when '215' was lost while flying from El Palomar to its home base at Villa Mercedes. Because of a heavy rain, the pilot tried an emergency landing on a field close to the town of Soler, Córdoba, but plane hit a windmill. The plane was destroyed and the crew was injured.

On 22 November, BAM Villa Mercedes became BAM Coronel Pringles with major Enrique Guntsche as commander. The year finished with the end of the Ae.M.B.2 modification trials. Planes '202' and '203' remained at Mendoza, while '205', '206', '208', '209', '211', and '213' were at Pringles. '212' was still at FMA and '204' and '214' were still out of service.

The Bombi is not bomber anymore

During 1940, the Bombis had been withdrawn from bombing tasks and were being used only for observation missions. This was made possible by the purchase of thirty Northrop 8A attack planes and twenty two Martin 139 WAA (B-10) bombers. These new planes were more modern and had better performance than the Ae.M.B.2 for attack and bombing missions.

However, the big fuselage of the Argentine plane made it well suited for other jobs, such as observation, dropping paratrooper, liaison, and transport, while keeping a secondary attack capacity. Bombi '212', while still at the FMA, had already dropped 122 paratroopers, inaugurating a new use for the Bombi.

The purchase of the imported planes, together with the Curtiss Hawk 75, was urgent because of the continuous failures of locally developed planes caused by the lack of experience in their construction and, in many cases, the improper operational use of prototypes.

In 1940, all Bombi except '205' and '206', which were in storage at Mendoza, were assigned to BAM Coronel Pringles. These included '204' and '214' that were taken from the FMA when the modifications were completed.

On 18 April 1940, once the B-10 were declared operational, Regimiento 1 de Bombardeo was transferred from El Palomar to Coronel Pringles and the Bombis become part of this unit until, by the end of the year, they were sent to the Regimiento Aéreo 3, together with the Northrop 8A.

Because they were considered obsolete, the Bombis were taken out of service by order of the Comando de Aviación de Ejército, together with the Ae.M.O.1 and the Avro Trainers. In August all three types began to fly again.

During 1941, '204' had an accident and was written off. The following year, the Bombis were transferred to Grupo 1 de Observación, who changed its base from El Palomar to Paraná. Later, '212' was sent to the Agrupación Entrenamiento which was created at El Palomar on 16 January 1942 for training duties.

During 1942, '202', '203', '205', '206', '208', and '214' arrived at Grupo 1 de Observación, while '206' remained at Regimiento 3 in Mendoza, together with '209' and '211'. Immediately after the arrival at Paraná, the Bombis received a system for instrumental training and K3B photographic cameras. That year was the first without accidents and the planes were finding their place in Argentine military aviation - not as bombers, but as useful observation and general purpose assets. On 21 October, a big observation exercise took place and the Bombis were part of it.

At Grupo 1 de Observación

On 10 June 1943, '209' arrived from Mendoza. By the end of the year, '213', that had been out of service, was written off, reducing the number of operational Bombis to nine machines. These nine machines received new radio equipment.

The year 1944 began at Grupo 1 de Observación with planes '205', '208', '209', '211', and '214' in service, to which were soon added '202', '203', and '212'. That year, the Bombis were used for navigation, observation, radio communications training, and photography.

The same year, by Reserved Order 58, the serials of all the Army Aviation planes were changed, receiving a letter before the numbers indicating the mission: “B” for bomber, “C” for fighter (caza), “O” was for observation, and “T” for transport. This system is still in use today by the Argentine Air Force. The Ae.M.B.2 become ‘O- 202’, ‘O-203’, ‘O-205’, ‘O-206’, ‘O-208’, ‘O-209’, ‘O-211’, ‘O-212’, and ‘O-214’.

Between 16 October 1944 and 3 November they participated on the exercises of the 4th and 5th Army Divisions at Pampa de Olaén. ‘O-205’, ‘O-208’, ‘O-209’, and ‘O-214’ took part together with two FMA Focke Wulf Fw-44J Stieglitz. Also, between 16 October and 5 November ‘O-202’ and ‘O-203’ took part in an exercise of the 3rd Army Division at Entre Ríos province.

During 1944, ‘O-211’ was sent to the new Escuela de Tropas Aerotransportadas (Airborne Troops School) at Córdoba. There it participated together with the Ae.M.S.1 in the first paratrooper jumps of the unit. The Bombi carried five paratroopers seated on the floor. The Bombis were later joined by the Junkers Ju-52/3m serial ‘T-152’.

The end is near

With the creation of the Fuerza Aérea Argentina in 1945, all Army Aviation units were transferred to FAA. As replacements for the Ae.M.Oe.2, Ae.M.B.2, Fw-44J and Avro Trainer the Air Force assigned observation duties to the new FMA IAe DL-22.

‘O-211’ continued at the Escuela de Tropas Aerotransportadas together with the Ae.M.S.1. Although both types were criticized by the paratroopers because of their limited space, small door, and high door-lintel. ‘O-205’ and ‘O-208’ were sent to the FMA for modification to be used for this purpose.

‘O-202’ was sent to BAM Coronel Pringles and received Telefunken Stat 274AF radio equipment as used on the Northrop 8. The new BAM Reconquista, in Santa Fe province, received ‘O-209’, but operations were reduced due to lack of spare parts. Grupo 1 de Observación was equipped with ‘O-202’, ‘O-203’, ‘O-206’, and ‘O-214’. ‘O-214’ was used for target towing in 1945 on anti-aircraft exercises.

Later in the year, three Bombi were sent to the Agrupación Entrenamiento at El Palomar where they were modified as crop dusters. They took part in the

fight against a plague of grasshopper before returning on 21 February 1946 to Grupo 1 de Observación. The dusting equipment was installed on the Avro Trainers. ‘O-206’, was still out of service when it was transferred to the Dirección de Institutos Aeronáuticos Militares (Military Aeronautical Institutes Direction, that commanded all the schools) for ground training. ‘O-208’ suffered a similar fate when it was transferred to the Escuela de Clases y Especialidades at Córdoba. It never flew again. On 17 July, ‘O-214’ was also sent there and was written off in 1947.

‘O-205’ was also grounded and never flew again, being used for ground training by the paratroopers. ‘O-211’ continued flying joined by ‘O-214’. During 1946, ‘O-212’ had a small accident at BAM Cnel. Pringles.

Farewell

By February 1947, ‘O-212’ was still flying with Grupo 1 de Observación. ‘O-211’ was grounded and written off together with ‘O-202’, ‘O-205’, and ‘O-209’. On 13 October, ‘O-203’ had an accident and was sent to the FMA for repairs. By the end of 1947, a memo from Grupo 1 de Observación indicated that the Ae.M.B.2 and Ae.M.Oe.2 were not needed anymore because more modern material such as the DL, Taylorcraft, and IA-20 El Boyero was available.

During 1948, ‘O-203’ was still out of service without an engine and was written off together with ‘O-212’ which was the last operational Bombi.

The fuselage of one of the planes at the Escuela de Paracaidistas of Córdoba was mounted on a structure for the pupils to practice jumping. By 1970, this fuselage was still with the Regimiento de Infantería 2 Paracaidista of the Army, but it was later replaced by an aluminium structure that kept the “Bombi” name until today - although almost nobody remembers the origin of the name.

The Bombi was a noble plane that symbolises the state of the art for the FMA in the thirties. However, it arrived a bit too late – a common problem of an industry with little experience.

Santiago Rivas (SAFCH 1739), Argentina.

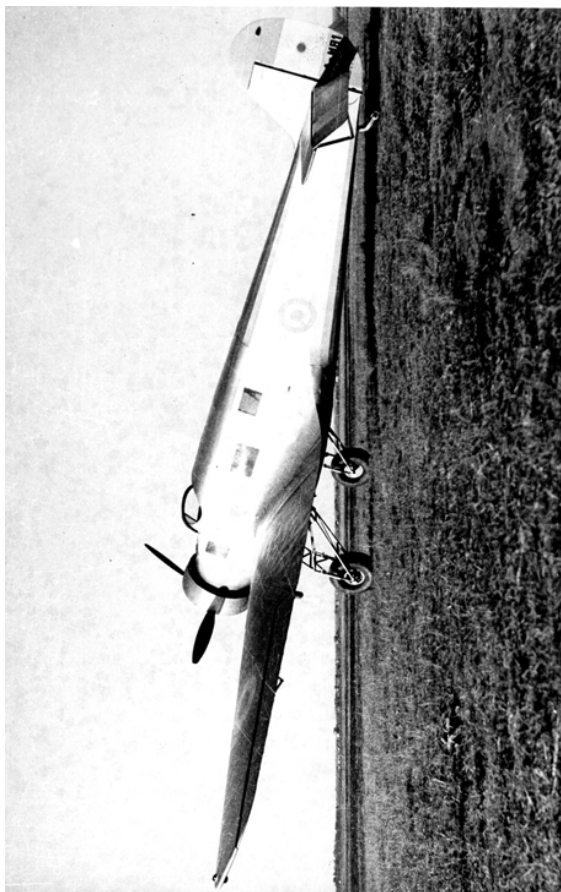
Author wishes to thank Daniel Gómez, Atilio Baldini, and Eduardo Amores Oliver for help with this article.

Technical characteristics and performances of the FMA Ae.M.B.1 and .2 Bombi

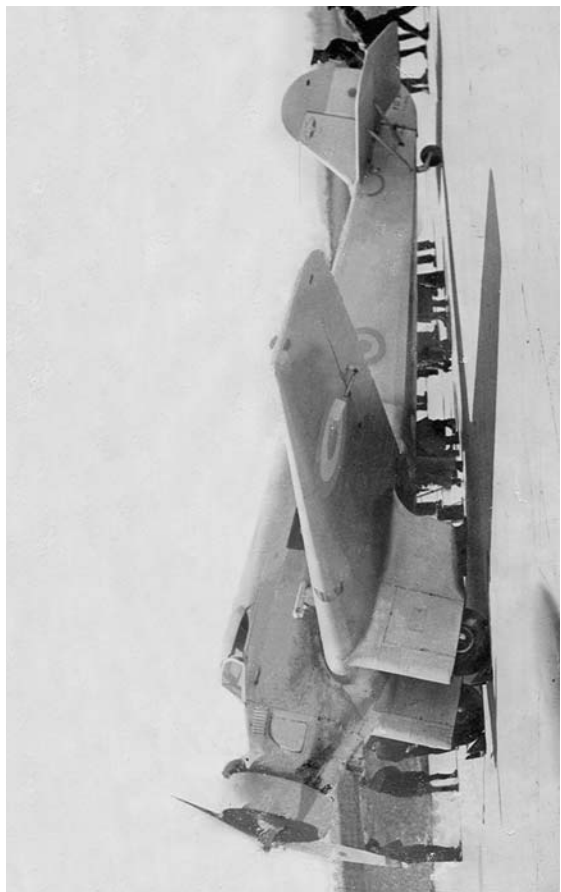
Engine	Wright Cyclone SGR-1820F3 radial of nine cylinder and 715hp moving a three blade Hamilton Standard propeller of variable pitch on the ground and 3.6m of diameter
Wing span	17.20m
Length	10.90m
Height	2.80m
Wing surface	35 square meters
Empty weight	2120kg
Payload	1380kg
MTOW	3500kg
Maximum speed	285km/h at 2100m
Cruise speed	240km/h at 2100m and 1750/1800rpm
Service ceiling	6000m
Range	600km
Alternative loads as a bomber	Pilot, bomber- co-pilot, wireless operator (total 240kg), 400kg of bombs, 30kg in ammunition and photographic material, 550 litres of fuel, complete oil and 20kg of radio equipment.
	Pilot, bomber- co-pilot, wireless operator (total 240kg), 100kg of bombs, 30kg in ammunition and photographic material, complete oil and fuel and 20kg of radio equipment.
Alternative loads as a transport	Pilot, co-pilot, wireless operator, one passenger, 40kg of cargo, complete fuel and oil
	Pilot, co-pilot, wireless operator, 3 passengers, 60kg of cargo, 700 litres of fuel, complete oil
	Pilot, co-pilot, wireless operator, 5 passengers, 40kg of cargo, 600 litres of fuel, complete oil



Additional photos on pages 2, 10, 32, 35, and 36.
All photos via the author.



1. The first prototype in its initial configuration



2. The first prototype taxiing

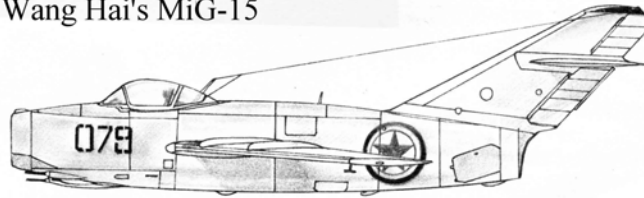


3. The first prototype equipped with bombs during tests



4. The prototype with a Breguet XIX machinegun mounting with two Lewis guns

Wang Hai's MiG-15



The PLAAF in the Korean War

D.Y Louie

The Korean War erupted on June 25, 1953. Its fire raged for the ensuing 3 years and a month. During the conflict the People's Liberation Army Air Force (PLAAF) developed a program loosely translated as "Using the Korean sky as a training class for MiG pilots"; i.e., to gain practical tactical experience through participation. Initially the PLAAF MiG cadets would fly high and fast above intruding aircraft avoiding engagement. As these inexperienced pilots gained confidence, they would become bolder. The more senior cadets would descend to meet their opponents while "green" MiG cadets would observe from high above. Despite heavy losses, those surviving MiG cadets were to become full fledged pilots, graduates of the Korean Air Combat School. A new cycle began when the graduates were transferred out of the front line. Aside from the valuable lessons learned, many of the Korean Air Combat School graduates were later to become cadres of the world's third largest air force. Specifically, General Wang Hai, former PLAAF Commander-in-Chief and his current successor, General Cao Shuangming, were ordinary young MiG cadets in the Korean War.

At the onset of the war, the newly established PLAAF had three fighter/interceptor, one bomber, and one ground attack regiments. The entire PLAAF had 171 operational aircraft of various types in its inventory. Its organization was patterned after the army. It lacked air combat experience. When Mao announced his intention on October 19, 1950, to "Aid our Korean brothers against the imperialistic aggression", the "greenness" of the pilots became a major concern in PLAAF command circles. An emergency meeting to define the anticipated role of the PLAAF in the upcoming conflict was convened shortly after General Peng Dehuai and his Chinese People's Volunteer Army (CPVA) crossed the Yalu River. On December 3, 1950, Col. Gen. Liu Yalou, C-in-C of the PLAAF, submitted a proposal for Mao Zedong's review and comment. This proposal detailed the goals and missions of the PLAAF and actions to achieve them. Col. Gen. Liu concluded that the role of the PLAAF would predominantly be for supporting the ground forces. He also emphasized that it would be prudent for the PLAAF to

avoid skirmishes with the opposing air forces. Rather, he favored large scale confrontations so that the heaviest blow could be delivered. Thus he would amass at least 100 to 150 planes per mission, and would wait for the opportune time to launch a strike. Mao gave Col. Gen. Liu's proposal the green light on December 4, 1950. Both Mao and Col. Gen. Liu were in agreement that a concentrated attack could maximize successes and minimize losses. After all, engaging the enemy with numerical advantages might compensate for the PLAAF's combat inexperience.

PLAAF's "Baptism by Fire" – Winter 1950/51

On December 4, 1950, the 28th Flying Group, 10th Fighter Regiment, 4th Air Division, received orders to begin air combat training. The bulk of the group's pilots were cadets from the defunct Manchurian Provincial Air Force. After about 25 hours of MiG-15 flight training, which included formation flight and combat tactics, 4th Air Division Commander Fang Ziyi and zampolit [Political Advisor] Li Shian led the group Langtou Air Base at Andong. Assisted by Soviet instructors, the Chinese pilots continued intensive combat training. The flight techniques practiced encompassed basics such as barrel roll, break, lag pursuit, spiral dive, split S, defensive split, high/low yoyo etc. As the 28th Flying Group gained experience, it would develop its own tactics.

On December 26, 1950, an inaugural flight consisting of ten MiG-15s in two flights (four and six MiG-15s respectively) flew across the China/Korea border. Their mission was to familiarize themselves with the geographical features of the region. They returned to Andong without any incidents. Four days later, GCI (Ground Control Intercept) detected four F-80s above Sinuiju. Four 28th Flying Group MiG-15s were immediately scrambled to hunt for the intruders. However, no contact was made.

The 28th Group got its first taste of air combat on January 21, 1951. Six MiG-15s led by squadron leader Li Han met with 20 F-84s over Pyongyang. Li Han and wingmen Sung Ahmin, Li Xiangong, Zhang Honqing, Zhao Min, and Zhao Zicai surprised the F-84s engaging on a dive-bombing run at an altitude of 1000m. Despite

numerical odds, Li Han managed to damage an F-84. (See Note 1) The six MiG-15s soon found themselves beset by other F-84s. They had to scram for safety.

The first confirmed aerial victory for the 28th Flying Group occurred eight days after its first encounter with the F-84s. At 13:00, PLAAF radar detected incoming enemy planes. Li Han led eight MiG-15s to meet them. Loitering at an altitude of 6000m and keeping the sun behind them, the MiG pilots waited for their preys. At 13:40, 16 F-84s in two eight-plane formations were sighted. Li Han gave the order to attack. He closed on an F-84 from astern and above. He fired at a distance of 400m to shoot it down. His wingman Li Xianguang also damaged an F-84 before the group returned to base. (Note 2)

Succeeding the 28th Flying Group were the 29th and 30th Flying Groups of the 10th Fighter Regiment, as well as various squadrons (Flying Groups) of the 12th Fighter Regiment, 4th Air Division. They were dispatched to Andong for combat training on January 17, and February 3, 1951. By March 2, the entire 4th Air Division was considered fully trained by the Korean Air Combat School. Its combat record logged 28 missions consisting of 145 sorties. Four of these missions and 24 sorties involved engagement with US aircraft. An F-84 was claimed and another F-84 was considered a probable. Two MiG-15s were lost in combat with one pilot killed in action. The 4th Air Division got a reprieve to lick its wounds while a cease fire was being negotiated.

Return to Battle – Autumn 1951

The negotiation failed to bring peace to the Korean peninsula. Therefore, on September 12, 1951, Commander Fang Ziyi, zampolit Xieh Xiyu, and 56 pilots of the 4th Air Division were again dispatched to Andong to keep a watchful eye on the UN forces. They brought along 56 MiG-15s. The UN forces, very annoyed when the peace talk stalled, decided to use air power to bring the Communists back to the negotiation table. Bridge busting became a typical mission for the UN forces. The bridge spanning the Chongchon River was vital to the North Korea supply line. It was, therefore, a prime target for the UN forces and a key point to be defended by the Communists. In the afternoon of September 25, 4th Air Division GCI radar detected 112 fighter bombers and escort fighters in five formations heading toward the Sinanju area. Sixteen MiG-15s led by Deputy Commander Li Wenmo of the 12th Fighter Regiment, 4th Air Division, were immediately scrambled to intercept the intruders. They met with more than 20 F-86s over Anjiu. Only 1000m apart and closing in, neither side had time to organize into combat formations. The ensuing melee was chaotic. When the smoke cleared, the 12th Fighter Regiment claimed to have shot down an F-86. (Note 3) This victory was considered to be the first Sabre shot down in Korea. However, this victory was not without its price.

The 12th Fighter Regiment suffered the loss of one MG-15 with its pilot Liu Yongxin. Moreover, group leader Li Yongtai of the 1st Flying Group landed with more than 30 bullet holes on his battered MiG-15; 12 F-86s had fired at him but failed to bring him down. Li Yongtai's luck and tenacity earned him the nickname "Flying Tank".

Air combat between the F-86s and MiG-15s continued to rage on September 26, and September 27, until the UN forces diverted the operation outside the "MiG Alley." Aside from sporadic skirmishes, there were no other significant engagements. On October 5, and 10, air combat resumed. During these two days, the 4th Air Division logged 80 combat sorties. 8 kills and 3 probables were claimed. The 4th Air Division admitted only one loss. Group Leader Hua Longyi, who commanded the 2nd Flying Group, established himself as a "Saber Slayer" by claiming to have shot down two F-86s on October 10. He went on to claim the shooting down of an additional F-86 and damaged another one on October 16, despite a blown off canopy and a bullet lodged in his left arm. (Note 4)

The second phase of air operation concluded when the 4th Air Division was recalled to Shenyang on October 20. During the 38-day stint in Korea from September 12, through October 19, the 4th Air Division logged 29 missions with 508 sorties. 7 major air battles, each with more than 200 participants, were fought. The 4th Air Division claimed 20 enemy aircraft destroyed and 10 damaged.

Replacing the 4th Air Division, acting commander Yuan Bin and zampolit Gao Haoliang of the 3rd Air Division led a new class of 50 cadets to Andong. Fifty new MiG-15s were also dispatched to replace the battle-worn MiGs of the 4th Air Division. The 3rd Air Division MiG pilots fought five times with their opponents from November 2 through November 10. Their claims were impressive: 8 USAF aircraft shot down or damaged with only minor damage on one of their own. During the aforementioned engagements, Zhao Baotong, deputy commander of the 3rd Flying Group, claimed two kills, and Liu Yuti, Group Leader of the 7th Fighter Regiment's 1st Flying Group, added one kill and one probable to the score sheet. As the 3rd Air Division became more experienced, a "Hit hard - Run fast" tactic was adopted to engage large quantities of enemy aircraft. The purpose was simple - to maximize kills and to expedite the learning period.

On November 18, at 14:00, 184 US aircraft in nine formations were detected entering "MiG Alley." Sixteen MiG-15s led by Deputy Commander Lin Hu of the 9th Fighter Regiment immediately took off to intercept them. They caught over 20 F-84s off guard near Suncheon. These F-84s were easy targets for the diving MiGs which had the sun behind them and an 8000m height advantage. The MiG pilots went home claiming to have sent six F-84s to

the ground. The star of this engagement was the 1st Flying Group Leader Wang Hai. He and his wingman Zao Jingwen shared four kills while his tail-end Charlie, Sun Shenglu, claimed an additional kill. (Note 5)

The success of the 9th Fighter Regiment's 1st Flying Group demonstrated the effectiveness of the "Hit hard - Run fast" tactic. It also won the respect of fellow pilots whom quickly dubbed the 1st Flying Group the "Wang Hai Group". The "Wang Hai Group" would later participate in more than 80 air battles. It was credited with destroying and damaging 29 US aircraft.

The 1st Flying Group of the 7th Fighter Regiment also emerged as a famous squadron during this period. On November 23, six formations of 116 F-86s, F-84s, and F-80s were intercepted by 20 MiG-15s led by deputy commander Meng Jin near Sunchon; seven F-84s were claimed shot down, and one other F-84 was claimed damaged. 1st Flying Group Group Leader Liu Yuti was credited with four kills in this engagement. (Note 6)

Three air battles, each involving over 300 F-86s and MiG-15s, were fought on December 2, 5, and 8. The 3rd Air Division claimed 13 kills (9 F-86s and 4 F-84s) and 2 probable kills. On December 5, while flying in a finger-four formation, pilot Luo Zhuanghai dived into a swarm of F-84s. He fired at his opponents at astern distances of 340m, 240m, and 145m to claim three F-84s; thus setting a record for a single pass. (Note 7)

The 3rd Air Division saw action in Korea from October 21, 1951, to January 14, 1952. During its 86-day stay, it flew 2391 sorties and engaged in 23 air battles. Its scores stood at 55 kills and 8 probable kills. Sixteen MiG-15s were lost and 7 more were damaged. 4 pilots achieved ace status namely, Zhao Baodong (8 kills), Liu Yuti (8 kills), Wang Hai (5 kills), and Fan Wanzhang (5 kills). Other pilots worth mentioning were Wang Hai's wingman, Zao Jingwen, (4 kills), Lin Guomin (3 kills), Liu Delin (3 kills), and Luo Zhuanghai (3 kills).

The Tu-2 Raid on Taewo-Do – November 1951

In addition to air-to-air combat, the PLAAF also undertook bombing missions. Two small islands west of Simni Island, Taewo-Do and Sowo-Do, had been occupied by US and South Korea force equipped with sophisticated intelligence gathering equipment. They were a thorn on the flank of "MiG Alley" and, therefore, were a prime target for the PLAAF. They were heavily guarded by the famous South Korean elite "White Horse" battalion and US special forces.

As the MiG pilots became more proficient, the PLAAF high command decided to tackle the task of removing the enemy installations on Taewo-Do and Sowo-Do. Pilots were selected from the 2nd, 3rd, 8th, and 10th Air Divisions to form a special bomb group. This group was deployed to an air base in Cholsan. In the early morning of November

2, four MiG-15s led by deputy group leader Wang Yonglou of the 2nd Flying Group, 7th Fighter Regiment, 3rd Air Division took off on a reconnaissance flight over the two islands. A follow-up flight of four La-11s led by Squadron Leader Xu Waitang of the 4th Fighter Regiment, 2nd Air Division was conducted at mid-day. These two flights provided the necessary information to the 50th Army coordinating the amphibious assault.

The PLAAF's first bombing mission was set for four days later. In the afternoon of November 6, nine Tu-2s led by formation leader Han Mingyang, Commander of the 22nd Bomber Regiment, 8th Air Division, took off from Hongzhuan Air Base, Shenyang. Each of the Tu-2s was armed with 8 HE bombs and an incendiary bomb. Simultaneously 16 La-11s led by Deputy Commander Zhang Hua of the 4th Fighter Regiment, 2nd Air Division were launched at Fengcheng Air Base to escort the bombers. 24 MiG-15s of the 7th Fighter Regiment, 3rd Air Division rendezvoused with the fighters and bombers near Simni Island to provide CAP. The defenders were caught off guard by the surprise attack. Antiaircraft fire was light. The PLAAF considered its first bombing mission a success.

At 23:15, November 29, ten Tu-2s led by formation leader Yao Changchun, Commander of the 28th Bomber Regiment, 10th Air Division, took off from Laoyang Air Base for a night raid against Taewo-Do and Sowo-Do. As the bombers were nearing the targets, they lined up in "follow-the-leader" formation and the lead plane jettisoned flares to illuminate the targets. The other bombers then delivered 54 HE bombs and 33 flares onto the two islands. Results of the PLAAF's first night raid were uncertain.

At 14:20 the following day, 9 Tu-2s, led by formation leader Gao Yueming, Commander of the 24th Bomber Regiment, 8th Air Division, took off from Hongzhuan Air Base, Shenyang. Each of the Tu-2 was armed with seven HE bombs and ten incendiary bombs. They rendezvoused with 16 La-11s led by Regiment Commander Xu Xiaowen of the 4th Fighter Regiment, 2nd Air Division, near Quasan. As the group was about to go "feet wet" at Sojoson Bay, it was bounced by more than 30 F-86s. Two of the 3rd Bomber Regiment bombers, piloted by Song Fengcheng and Liang Zijian, were immediately shot down. Another Tu-2 of the 2nd Bomber Regiment, piloted by Zhang Haoyang, had both its engines hit and it ditched into the sea. The attacking F-86s were relentless. They continued to inflict damage on five out of the six remaining bombers. A Tu-2, piloted by Bi Huawu, was shot down. However, one F-86 also yielded to the machine gun fire of a Tu-2 radio operator Liu Shaoji.

While the Tu-2s fought desperately to ward off the F-86s, the escorting La-11s also engaged the attackers. In the end, the PLAAF claimed seven F-86s had fallen under the guns of the piston-engine La-11s! With one kill and three

probables claimed, Deputy Squadron Leader Wang Tianbao was the leading scorer among the La pilots. Squadron Leader Xu Waitang was credited with one kill. Deputy Squadron Leader Wang Yong and pilot Liu Zhesheng were awarded one probable each. (Note 8)

More MiG Action – Winter 1951/52

The PLAAF command was determined to commit more pilots to the Korean sky. On November 16, 1951, 14th Air Division Commander Wang Yuhuai and zampolit Xie Ziyu led 43 cadets to Andong. These new pilots would undergo vigorous training by the 3rd Air Division from November 28 through December 10, before they were considered fully combat ready. Their first taste of battle occurred on the morning of December 13 when 22 MiG-15s of the 42nd Fighter Regiment, 14th Air Division, and 16 MiG-15s from the 9th Fighter Regiment, 3rd Air Division scrambled to intercept incoming enemy aircraft near Chongchon. They met their opponents, but had mistaken the F-86s as the obsolete F-84s. Consequently, some of the new cadets were so excited that they even forgot to jettison their auxiliary fuel tanks. They paid dearly for their inexperience; seven MiG-15s were shot down and two more were damaged. Of the seven pilots ejecting, one pilot's parachute failed to open and he plunged to his death.

The 14th Air Division did not have much time for ieving. They were again called for action on December 15. At 06:58, 18 MiG-15s led by Deputy Commander Bian Fengzi of the 42nd Fighter Regiment and 16 MiG-15s of the 9th Fighter Regiment, 3rd Air Division, intercepted 52 F-84s over Pyongyang. The MiG pilots performed better during this engagement; nine F-84s were claimed shot down and two more were claimed damaged. The 2nd Flying Group Leader Gao Zitan and the 3rd Flying Group Leader Ding Shichi of the 14th Air Division were credited with one kill each. The 9th Fighter Regiment was claimed for the other 7 kills and 2 probables. They also suffered the loss of one MiG-15. (Note 9)

During that same period, the 6th Fighter Regiment of the 2nd Air Division also saw action over Korea. At 09:20 on December 14, ten US aircraft were detected entering “MiG Alley”; 24 MiG-15s led by 2nd Air Division Commander Xu Dengguang took off to intercept the intruders. They found a formation of F-80s over Pyongyang. The ensuing battle resulted in claiming two F-80s shot down. Deputy Division Commander Xin Haifan claimed one kill and one probable in this engagement. On returning to base, 3rd Flying Group pilots Yang Muyi and Xie Yingquan caught a single B-26 north of Pyongyang. It was an easy prey for the two pilots. (Note 10)

Following the 2nd and 14th Air Divisions, Deputy Commander Bei Sha and zampolit Zhang Ziyong of the 6th Air Division led 42 pilots to Andong on December 8th. The 6th Air Division had 52 MiG-15s originally. Shortly

afterward, two were lost en route due to pilot errors. PLAAF Commander Liu Zhen was appalled. He ordered the 6th Air Division to shape up and to intensify its training program. The 6th Air Division saw action for the first time on January 5, 1952. 20 MiG-15s of the 18th Fighter Regiment, 6th Air Division engaged a few F-80s in the “MiG Alley.” Both sides escaped without harm. In the morning of January 31, 36 MiG-15s of the 16th Fighter Regiment, 6th Air Division, intercepted 12 F-84s and F-86s. The 1st Flying Group Group Leader Xu Shuiyu claimed an F-84 shot down, and the 2nd Flying Group Group leader Zhu Yuting claimed an F-86 shot down. (Note 11)

On January 16, 1952, the battle-hardened 4th Air Division was again responsible for guarding “MiG Alley.” Two groups of 16 F-84s and F-80s escorted by 18 F-86s were detected entering Pyongyang air space on the morning of February 10. Commander Yuan Zizhu of the 10th Fighter Regiment led 16 MiG-15s and 18 MiG-15s from the 12th Fighter Regiment took off to engage the incoming raiders. They met the intruders over Sojosan Bay. Major George Davis of the 4th Wing, USAF was leading the attack group. He immediately shot down two MiGs. As he was chasing and firing at a third MiG, he was attacked by 3rd Fighter Group Group Leader Zhang Jihui of the 12th Fighter Regiment and wingman Xian Ziyu. Zhang Jihui's most publicized victory was his duel with Lt Col. George A. Davis, 4th FIW, USAF on 10 February, 1952. Lt Col. Davis was a double ace with seven kills against the Japanese in WW2 and eleven MiG kills in Korea. Lt Col. Davis was chasing a MiG-15 and momentarily left his rear unguarded. This rare negligence was harnessed by Zhang Jihui lofting above to eventually achieve the kill. Major Davis crashed approximately 30 miles south of the Yalu River. Zhang Jihui was credited with this kill. (Note 12)

In mid-January, 1952, Commander Huang Yuting and zampolit Cui Wenbin of the 15th Air Division led 48 cadets with 43 MiG-15s to join the 4th Air Division at Andong for combat training. Its first engagement with F-86s resulted in one MiG-15 lost and one damaged – an ominous beginning. However, luck was on the 15th Air Division's side on March 20 when two F-86s were claimed shot down, one each by Deputy Commander Lin Gongshan and the 1st Flying Group Leader Fan Yuxiang. Pilot Sun Zhongguo also claimed to have damaged an F-86. (Note 13)

On February 4, 1952, Mao Zedong instructed PLAAF commander Liu Zhen to deploy more units to the front line to acquire combat training. As a result, Commander Wang Mingli and zampolit Li Mingguang of the 12th Air Division and 45 cadets with 49 MiG-15s were ordered to Andong in mid March. Commander Li Shuyong and zampolit Luo Bin of the 17th Air Division with 52 cadets and 42

MiG-15s; and Commander Wang Dingli and zampolit Xu Ming of the 18th Air Division with 39 cadets and 40 MiG-15s were dispatched to Andong in late March.

By the end of May, 1952, the PLAAF in Korea had grown to ten Air Divisions – 2nd, 3rd, 4th, 6th, 12th, 14th, 15th, 16th, 17th, and 18th – with 19 Fighter Regiments assigned (one MiG-15 regiment from the 2nd Air Division, and two regiments each of the others) operational, and two Bomber Divisions – the 8th and 10th Air Divisions – operational, with four bomber regiments assigned. Maintenance and support for these 12 Air Divisions were provided by 28 tactical auxiliary units. Pilot strength had increased to 447. They logged 680 missions with 11100 sorties. These included 85 air combat missions with 1602 sorties. The PLAAF Command claimed 123 kills and 43 probable kills. Admitted losses stood at 82 MiGs shot down and 27 damaged.

The PLAAF Matures – Spring 1952

Few engagements were made between February and August due to peace talks. When the talks collapsed and the hostilities resumed, the PLAAF high command put the "Contingency Plan" in process. This plan would maintain the strength of seven air divisions with 14 regiments in front line service. They would be replaced by a new group of equal strength every three months. The plan was designed to expedite the "Maturity" of the PLAAF young eagles.

In the afternoon of July 27, Chief Navigator Li Honzhin of the 51st Fighter Regiment, 17th Air Division led four MiG-15s to intercept four F4Us near Pyongyang. Pilot Wang Shiyang claimed one kill. On that same day, eight MiG-15s from the 9th Fighter Regiment, 3rd Air Division jumped four Sea Furys. Pilot Zhang Shaolan and pilot Zhu Zimin each claimed one kill each and pilot Liu Zitian claimed a probable. (Note 14)

On Monday, August 5, six MiG-15s from the 34th Fighter Regiment, 12th Air Division and 9th Fighter Regiment, 3rd Air Division engaged 12 F-80s and F-84s. The 3rd Flying Group Leader Liu Huanzi claimed an F-84. Group Leader Wang Hai claimed another F-84 while pilot Li Lanmo claimed to have bagged an F-80 and damaged another one. (Note 15)

From August 6 to August 10, the PLAAF flew 92 sorties. 13 enemy planes were tallied. The PLAAF suffered 10 lost and 2 damaged.

At 14:14 on September 4, 100 US fighter bombers escorted by over 80 F-86s were detected entering "MiG Alley." MiG-15s from the 7th Fighter Regiment, 3rd Air Division, and 36th Fighter Regiment, 12th Air Division joined forces with MiGs flown by Russian "volunteers" scrambled to intercept the intruders. The 16 MiG-15s, led by Deputy Commander Sun Jinghua of the 7th Fighter Regiment, were caught by 32 F-86s; six MiGs were lost.

The PLAAF claimed three kills and two probable: Squadron Leader Yang Wenzhong (1 kill), Squadron Leader Wei Xuanlu (1 kill), pilot Gao Zhengong (1 kill), Squadron Leader Yen Zhongshan (1 probable) and pilot Zhang Xiaoshan (1 probable). (Note 16)

The 3rd and 12th Air Divisions MiG-15s engaged F-86s seven times during December 2nd, 3rd, and 5th. In the morning of December 2, Commander Zhang Changhua of the 34th Fighter Regiment, 12th Air Division intercepted 16 F-86s; two F-86s were immediately claimed shot down. Pilot Zhang Daochen reportedly forced an F-86 to ditch during a dogfight. In the afternoon of the same day, 12 MiG-15s of the 9th Fighter Regiment, 3rd Air Division led by Deputy Commander Wang Hai claimed two kills engaging F-86s. Another F-86 was credited to the 12 MiG-15s of the 7th Fighter Regiment, 3rd Air Division during a separate engagement. (Note 17)

In the afternoon of December 3, 12 MiG-15s from the 9th Fighter Regiment, 3rd Air Division joined 12 MiG-15s from the 36th Fighter Regiment, 12th Air Division to attack 24 F-86s. Three F-86s were claimed. Flying Group Leader Sun Shenglu lost his life in this engagement. He was a Korean War ace credited with seven kills. At midday, December 5, 36 F-86s were bounced by 34 MiG-15s from the 34th and 36th Fighter Regiments, 12th Air Division and 12th Fighter Regiment, 4th Air Division. Three F-86s were claimed shot down. Commander Wang Huaqing of the 36th Fighter Regiment claimed one kill and Maintenance Supervisor Lu Min of the 12th Air Division claimed two F-86s shot down in the engagement. Lu Min went on to claim three more F-86s on each day December 6, 16, and 23. From fellow pilots, he earned the nickname "Sabre Slayer". (Note 18)

December 1952 was considered a successful month for the PLAAF in Korea. During 26 days of air combat in that month, the PLAAF logged 157 missions with 1623 sorties. 34 engagements with F-86s were recorded; 37 kills and 7 damaged were claimed while the PLAAF admitted 12 losses and 14 damaged.

The Last Year – January – July 1953

January 1953 saw the most air combats in the Korean sky. The PLAAF flew 14 missions with 1566 sorties during that month. The most significant engagement occurred on January 13th; 96 MiG-15s in three tiers. The "lead group" (to engage enemy escorts) and "strike group" (to engage enemy fighter-bombers) were composed of MiG-15s from the 3rd, 12th, and 15th Air Divisions. The "cover group" (protecting the lead and strike groups) was made up of MiG-15 from the 4th and 6th Air Divisions. They intercepted 172 US fighter bombers escorted by over 100 F-86s over the Chongchon River area. Three F-86s each reportedly fell under the guns of Squadron Leader Liu Zitian of the 9th Fighter Regiment, 3rd Air Division and

Deputy Commander Yen Chiwei of the 34th Fighter Regiment, 12th Air Division. Pilot Gao Yijin. Lu Zitian also claimed to have damaged another F-86. (Note 19)

Like the famous "Wang Hai Group", the "Li Shiyong Group", 1st Flying Group of the 45th Fighter Regiment, achieved fame for shooting down 14 enemy planes with no loss in eleven engagements in January. The four members of the "Li Shiyong Group" were Flying Group Leader Li Shiyong, wingmen Yen Qingsui, Sung Yichun, and Jiang Daoping.

On February 17, at 15:34, three MiG squadrons from the 49th and 51st Fighter Regiments scrambled to engage oncoming F4U ground attack planes. The first squadron met six F4Us over Nampo. The F4Us immediately formed a defensive circle. Pilot Zhang Guolu dived into the circle to claim one of the F4Us shot down. The second squadron did not find any F4Us. The third squadron engaged four F4Us over the Taedong River delta. Pilots Chen Taichu, Gan Dongqing, and Li Chunmeng were each credited with destroying an F4U. (Note 20)

On March 26, at 04:44, four F4Us escorted by eight "F-80s" (more likely USN F9F Panthers) were detected entering "MiG Alley." Eight MiG-15s of the 48th Fighter Regiment, 16th Air Division intercepted the raiders near Pyongyang. Pilot Zhang Qinwen was credited with shooting down an F4U and pilot Huang Mixian damaged an "F-80". (Note 21)

In the afternoon of April 7, 12 MiG-15s of the 43rd Fighter Regiment, 15th Air Division were returning to Dabao Air Base after an engagement with F-86s over Pyoktong. Wingman Han Decai and his leader Zhang Nuke were the last pair for the final approach. Suddenly, Han Decai was alerted by the ground controller that they were being followed. He immediately zoomed up to a higher altitude for a visual check. He saw an F-86

positioning itself at Zhang Nuke's six o'clock high. Flashes were seen coming out of the F-86 and the MiG in front was trailing smoke. Han Decai attacked the F-86. The F-86 came hard into the MiG-15 and Han turned inside of him and eased himself into position on the tail of the F-86. As his prey entered his gun sight ring, he fired at a distance of 300m. The F-86 caught fire and lost altitude. The pilot bailed out and was captured near the air base. Han Decai had only logged about 100 hours of MiG-15 flying time. The F-86 pilot was Capt. Harold E. Fischer, 51st FIW USAF, an experienced pilot who had logged ten MiG kills in Korea. Capt. Fischer spent the next two years in a prison camp. He was released in 1955 during a prisoner exchange program. (Note 22)

The last air battle of the Korean War occurred on July 19, at 16:15 when 168 US planes attacked the air bases at Sinuiju and Uiju. They were intercepted by 16 MiG-15s led by Cu Chengtien of the 16th Fighter Regiment, 6th Air Division and eight MiG-15s led by Zhu Hutian of the 10th Fighter Regiment, 4th Air Division. An F-86 was claimed by pilot Shen Hongjiang. (Note 23)

The final tally released by the PLAAF indicated a total of 206 enemy planes destroyed and 52 damaged. The Korean Air Combat School had trained pilots for the 2nd, 3rd, 4th, 6th, 12th, 14th, 15th, 16th, 17th and 18th Air Divisions. For its own loss, the PLAAF admitted 144 aircraft lost and 122 damaged.

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D. Y. Louie (SAFCH # 544), USA.

Notes

Contributed by Doug Dildy

1. Russian sources confirm that six PLAAF MiGs joined eight MiG-15s from the Soviet 29th Guards Fighter Aviation Regiment (Russian abbreviation GvIAP) in engaging "a large number of F-84s over Anju." Specifically, Li Han led his formation in attacking four F-84s from the USAF 523rd Fighter-Escort Squadron/27th Ftr-Esc Group who were dive-bombing the bridge over the Chongchon River at Anju. Li Han damaged F-84E (S/N 49-3240) so badly that the pilot, 1st Lt Grant W. Simpson, bailed out of his stricken aircraft (but was killed) and the aircraft crashed. So actually Li Han should be credited with a victory (or "kill") and not just for damaging the American aircraft.

2. On 29 January, the Chinese [and Russian] pilots misidentified the aircraft they were attacking – these were actually Lockheed F-80C Shooting Stars from the 36th Fighter-Bomber Squadron/8th Ftr-Bmr Group. (This was a common complication to Soviet, PLAAF and KPAF combat reports because, in the air,

and especially from above and behind – the attacker's viewpoint – the two American jets appear very similar.) While none of the American F-80s were lost in the dogfight itself, USAF records attribute the loss of 1st Lt Arthur E. Hutchinson's F-80C (S/N 49-850) during his return to base in Japan to an engine flameout over Tsushima Straits, possibly as a result of battle damage from combat with MiGs.

3. The dogfights of 25 September, were indeed intense and confused, but with little actually accomplished. The Soviet 176th GvIAP participated as well, claiming four F-86s shot down. The Communists fought against the USAF 4th Fighter Interceptor Group (FIG), which claimed five victories. The Russians lost no MiGs and the USAF only suffered damage to one F-86A.

4. The clash on 10 October was equally inconclusive, with no F-86s lost, and no "kills" being claimed by the Americans. Six days later, according to one Russian history, the 4th FIG was

winning the fight against the PLAAF's 12th Fighter Regiment when their 196th IAP came to the rescue, damaging one F-86E so badly it flamed out and crashed during return to base. USAF pilots claimed nine victories.

5. In a rare instance when F-86s arrived too late to help, the PLAAF 9th Fighter Regiment and two Soviet MiG-15 regiments (18th and 176th GvIAPs) attacked the 136th Ftr-Bmr Group. In addition to the six victories claimed by the Chinese, the Russians claimed four F-84s shot down. Actually the only loss was F-84E (S/N 51-542) which was flown to Cho-do Island before the pilot ejected and was rescued.

6. Similarly, on 23 November three Soviet regiments (54 MiG-15s) participated in the attacks on the American F-84Es, in this case claiming two shot down. No USAF aircraft were lost to any cause on this date.

7. During the combats of December 5, all five Soviet MiG regiments (303rd and 324th IADs) participated in "repelling the enemy's fighter-bombers in the Anju area." They claimed three F-80s, three F-84s and one F-86 shot down. The only USAF loss that day was F-84E (S/N 49-2415) of the 136th Ftr-Bmr Group HQ flight. Capt. Hugh F. Larkin was one of a pair making a bomb run on a railway near Sinanju when attacked by MiGs – Larkin ejected but was never found. The circumstances of Larkin's loss does not correlate to Luo Zhuanghia's claim, but was credited to Lt. Col. S. F. Vishniakov (176th GvIAP commander).

8. Wang Tianbao did indeed damage the F-86 of Maj Winton Marshall (335th FIS/4th FIW), who was wounded in the duel. Marshall's jet fell off into a spin (resulting in Wang's perception of a "kill") but Marshall was able to regain control and returned to Kimpo. The F-86 flown by Lt. Ray Barton (336th FIS) was

damaged by a MiG-15 during this combat.

9. In this instance, the Communists' battle plans went as proscribed: four Soviet MiG-15 regiments engaged the two USAF F-86 groups and claimed three Sabres shot down (one was actually lost) with no losses allowing the PLAAF MiGs to attack the fighter-bombers unmolested. However, all the F-84s recovered safely to their bases.

10. In a like fashion, four Soviet MiG-15 regiments claimed eight Sabres shot down (two were actually lost) with no losses while the PLAAF MiGs attacked the fighter-bombers. USAF records show the loss of one F-80C and an F-84E, but both were due to ground fire/AAA at relatively low altitude. No B-26s were lost this day.

11. No USAF jet aircraft were lost to any cause on January 31, 1952.

12. Zhan Jihui did indeed shoot down and kill the USAF's leading ace, 334th FIS Commander Maj. George Davis (F-86E S/N 51-2752), as described. Russian histories attempt to pirate the credit for this victory by asserting that 148th GvIAP's 2nd Squadron Commander, Capt. Lionid I. Savichev, was responsible for this high profile "kill". However, Savichev's battle took place near Suiho Dam, miles to the northeast of Andong and bears no correlation whatsoever with the dogfight in which Maj. Davis was killed.

13. No F-86s were lost to any cause on March 20, 1952.

14. No USN or RN propeller-driven carrier aircraft were lost to any cause on July 27, 1952.

15. The only F-80/-84 lost on August 5, 1952, was hit by ground fire while making a steep dive to attack truck column.

16. On the afternoon of September 4, PLAAF MiGs flew high cover for the

Soviet 676th IAP while their 415th IAP formed the low altitude strike group. During return to Dabao AB, the MiGs were attacked by 4th FIG F-86s. In the melee, two Sabres (334th FIS F-86E 50-678 and 335th FIS F-86E 51-2722) were badly damaged – and were eventually abandoned by their pilots – but with 24 Russian and 16 PLAAF MiGs involved, it is impossible to determine the victor(s) in this case.

17. No F-86s were lost to any cause on December 2, 1952.

18. While the USAF lost no F-86s on December 3, two days later the 39th FIS/51st FIG lost one F-86F (51-12906), its RCAF exchange pilot being captured by the Chinese and held prisoner until 1955. This victory is credited to Soviet Capt. F. P. Fedotov.

19. No F-86s were lost to any cause on January 13, 1953.

20. No F4Us were lost to any cause on February 17, 1953.

21. No USN aircraft were lost to any cause on March 26, 1953.

22. Han Decai did indeed shoot down American "ten-kill ace", Capt. Harold E. Fischer (flying 39th FIS F-86F S/N 51-2852), as described. As is not unusual, Russian histories also claim credit for this high profile victory, this time asserting that Capt. Gregorii N. Berelidze (224th IAP) was responsible. However, reading both Han Decai's and Berelidze's accounts of the action, and comparing them with Fischer's description, it is apparent that Han Decai was flying the MiG that shot down Fischer and that, approaching from directly behind, Berelidze confused Han's MiG for Fischer's F-86 and damaged it, forcing him to land with no hydraulics and only one main landing gear extended.

23. No F-86s were lost to any cause on July 19, 1953.

Appendix

Chinese People's Volunteer Air Force Aces during the Korean War:

Wang Hai was born in the City of Weihaiwei, Shangdong Province in 1925. His real name was Wang Yunchang. He joined the Zaodong Guerrilla Youth Corp in 1944 and became a member of the Communist Party the following year. He was recommended by the East Army Field Corp to attend the Northeast Aviation Academy in 1946. In November 1949, Wang

graduated with honors. He rose to the rank of Group Leader attaching to the 7th Fighter Regiment 1st Air Division in 1950, the same year when he commenced MiG-15 flight training. He entered the Korean War as the flight leader of the 9th Flying Group in 1951. During the Korean War, as the Group Leader of the Flying Group, Wang participated in more than ten air battles

against the Allied Air Force in his MiG-15. He had six kills and three damaged to his credit. His group, dubbed the "Wang Hai Group", achieved a total of 29 kills and damaged.

Sun Shenglu was born in the Dingxin County, Hebei Province in 1928. He joined the People's Liberation Army in 1945 and became a member of the Communist Party a year later. He went to Korea as one of the pilots of the Chinese People's Volunteer Air Force's 9th Fighter Regiment in 1951. His record of six kills and one damaged had earned him the moniker "Flying Sniper." On 2 December, 1952, without regard of his own safety, he charged into a swamp of enemy planes to save a colleague. Though he managed to score two additional kills in this engagement, he returned to base with more than twenty bullet holes on his MiG-15. The next day, Sun was in action again. After achieved another kill, Sun found himself ambushed by eight enemy fighters. He never returned to base.

Zhao Botong was born in the Shangdong Province in 1928. He joined the 8th Route Army in 1945 and became a member of the Communist Party the following year. As a graduate of the Northeast Military Academy and the Northeast Air Force Academy, he was sent to the Soviet Union to attend the Moscow Military Academy. He went to Korea in 1951 as the Deputy Commander of the 7th Fighter Regiment's 2nd Flying Group. His more than twenty air engagements awarded him with seven kills and two damaged. Zhao's greatest achievement occurred on 4 November 1951 above Kaechon when Zhao hammered down two F-84s.

Liu Yuti was born in Chong County, Hebei Province in 1923. He joined the 8th Route Army in 1938 and became a Communist Party member the following year. He completed his education in engineering from the College of Resistance Against Japanese Aggression and his political training from the Political and Military Academy of Resistance Against Japanese Aggression before receiving flight training at the Northeast Air Force Academy. He entered the Korean War as the Group Leader of the 7th Fighter Regiment's 1st Flying Group in 1951. Liu's six kills and two damaged were achieved in two engagements. During the 10 November, 1951, air battle, Liu managed to score two kills and two damaged. But this record was outshone by his downing of four F-84s in the air battle above Sonchon on 23 November the same year.

Jiang Daoping was born in the Shangdong Province in 1924. He joined the 8th Route Army in 1942 and became a Communist Party member in 1944. He was a graduate of the Northeast Air Force Academy. He entered the Korean War as the Deputy Group Leader of the 4th Air Corp in 1951. His tally was five kills and two damaged.

Han Decai was born in Fengyang County, Anhui Province in 1933. He enlisted in the People's Liberation Army in 1949; subsequently became a Communist Party member in 1953. As a graduate of the People's Liberation Armed Forces 5th Aviation Academy, Han went to Korea with the 43rd Regiment as a pilot. Despite the fact that Han had less than 100 hours flying the MiG-15, Han scored five kills.

Zhang Jihui was born in Yongcheng County, Shangdong Province in 1927. He joined the 8th Route Army and became a Communist Party member in 1945. Zhang was a graduate of the Political and Military Academy of Resistance Against Japanese Aggression, the Northeast Air Force Academy, and the Moscow Air Force Academy. He entered the Korean War as a Group Leader of the 12th Fighter Regiment in 1951. He scored five kills in Korea.

Zhou Yan was born in the Shangdong Province in 1925. He joined the 8th Route Army in 1943 and became a Communist Party member in 1944. He was a graduate of the People's Liberation Armed Forces 5th Aviation Academy. He entered the Korean War as a Group Leader of the 10th Fighter Regiment in 1951. His tally was five kills.

Lu Min was born in the Shangdong Province in 1925. He joined the 8th Route Army in 1943 and became a Communist Party member in 1945. He was a graduate of the Northeast Air Force Academy. He entered the Korean War as a Group Leader of the 4th Air Division in 1951. He was credited with six kills. Lu Min was celebrated along with Wang Hai, Zhao Botung, and Liu Yute as the four greatest heroes of the Chinese People's Volunteer Air Force in Korea. However, this celebrity's status did not save Lu Min from being disgraced during the Cultural Revolution in the mid 1960s. Lu was branded as an ardent Lin Biao supporter. The guilt by association landed Lu in prison and the loss of his Communist Party membership.



A Fighter for the World

The Mirage export customers: Part 2

[Editor's note: This is the second part of an article that first appeared in Aviation Classics #17 and is reproduced here with the permission of their editor, Tim Callaway. The first part appeared in SAFO #152.]

Egypt

Immediately after his successful coup against King Idriz in September 1969, Colonel Muammar Gaddafi began reforming the armed forces of Libya. In 1970, 110 Mirages were ordered from France, consisting of 32 Mirage 5DE radar equipped interceptors (essentially Mirage IIIEs with the Cyrano II radar), 15 Mirage 5DD two seat combat trainers, 10 Mirage 5DR reconnaissance aircraft and 53 Mirage 5D ground attack aircraft. These were supported by a flight training simulator and sufficient spares, engines, support equipment and weapons to last many years. This may seem a strange way to begin a description of Egypt's use of the Mirage, but there is good reason for this. The first aircraft from this massive order began reaching Libya in 1971, but five Mirage 5B two seaters had already been operating in Libya between August 28 and 4 September 1970, Armée de l'Air Mirage IIIBs painted in Libyan colours and crewed by one French and one Egyptian pilot. Gaddafi's reasoning behind the large order was clear, he wished to further his ambitions of unifying the Arab nations, build up a large and effective military reserve and assist Egypt in preparing for the next war against Israel. To this end, a number of Egyptian pilots were given Libyan passports to enable them to travel to and train in France on the Mirage during the early 1970s. A large training, maintenance and storage facility was established at the former RAF airfield of El Adem, now named Gamal Abdel Nasser Air Base, where French and Pakistani instructors taught more Libyan and Egyptian air and ground crew to operate and maintain the Mirages. Many of the aircraft delivered to Libya were immediately forwarded to Egypt, so by 1973 20 Mirage 5DEs, 20 5Ds and two 5DDs were in Egyptian markings and equipping '69 Independent Squadron Mirage' of the Egyptian Air Force (القوة الجوية المصرية, Al-Qūwāt al-Gawwīyā al-Misrīyā or EAF), along with a supply of spares and support equipment. The Egyptian pilots found the Mirage to their liking, the equal of the MiG-21F-13 they had been operating in terms of air to air combat, and superior to the Su-7 as a ground attack aircraft. At 14.00 hrs on 6 October 1973, 16 Mirages from 69 Squadron flew their first ground attack missions against Israeli positions near the Tassa pass. The Yom Kippur or October War had begun and the Mirages were to be heavily involved, flying 495 combat missions. The war ended on October 25, and not a moment too soon for 69 Squadron, who were beginning to run short

of spares, resupply from Libya had been requested but would take several days.

The end of the October War also saw the beginning of the end of Libyan co-operation with Egypt, Gaddafi was furious with Egypt, Syria and Jordan for failing to carry out what he called a 'total war of liberation' against Israel. In fact, Gaddafi was well aware that the war and its outcome meant there could be no super-state of Libya and Egypt, and his plans for expansion were thwarted. But too return to the story of the Mirage in the region. Since the EAF pilots had been so favourable about the Mirage, a second Arab country was used as a conduit to acquire more of the aircraft. In 1972, Saudi Arabia ordered 32 Mirage 5SDEs, the exact equivalent of Libya's Mirage 5DEs, along with six Mirage 5SDD two seat trainers. These were painted in the colours of the Royal Saudi Air Force and paid for by Saudi Arabia, but delivered to 69 Squadron of the EAF at Birma/Tanta Air Base in Egypt throughout 1974. As these aircraft were delivered, the remaining Libyan Mirages were returned, this initial order being the first of 82 Mirage 5s purchased on behalf of and by Egypt over the next six years. Also in 1974, Egypt ceased military trading with the former Soviet Union which would have left the mostly Soviet equipped EAF woefully weak if the "Saudi" Mirages had not been in service. Egypt's economy was in a serious downturn after the war so President Sadat engaged in peace talks with Israel, culminating in a visit to the country in 1977. This action caused a storm of protest across the Arab world, and in July Libya tried to send a protest march to Cairo. This was in fact Gaddafi still pursuing his dream of uniting Egypt, Libya and Tunisia under his leadership. These so called protesters were stopped at the border, so on July 20 Libyan artillery opened fire on Egyptian border installations. For the next four days, Egyptian land and air forces were engaged in fighting as far as the town as Mussayid in Libya, while the air forces exchanged raids on each other's airfields and radar stations before President Sadat called for a cease fire on July 24. Several skirmishes between Libyan and Egyptian fighters were to occur along the border for a number of years despite the cease fire. Three ex-Zaire Air Force Mirage 5Ms were purchased in the mid-1990s. Since then, the EAF has seen a long period of peace. In 2012 the EAF still operates the 60 remaining Mirages of the 82 delivered, all with 69 and 73 Squadrons of 263 Brigade at Birma/Tanta. This fleet is made up of 36

Mirage 5SDEs, 12 of the radarless ground attack Mirage 5E2s, six Mirage 5SDR reconnaissance aircraft and six Mirage 5SDD two seat trainers.

Gabon

Toward the end of the 1970s the mid-African Republic of Gabon wanted to upgrade its military aircraft so placed an order for 7 Mirage 5s in 1975, to be made up of three Mirage 5G fighter bombers, two Mirage 5DG two seat trainers and two Mirage 5RG reconnaissance aircraft. The last two aircraft were eventually cancelled, the remaining five arriving in Gabon in 1978. In 1984, two more Mirage 5DG trainers were delivered, and four more upgraded Mirage 5G-2s were ordered. As part of this order, the surviving original pair of 5Gs were to be upgraded, and four more were to be converted from Mirage 5Ms built for the Zaire Air Force but not delivered. These were replaced in service by eight Mirage F.1AZs ordered from ex-South African Air Force stock.

Israel

The development of the Mirage derived Nesher and Kfir will be covered later in this magazine, but for the sake of completeness it is worth noting that the Israeli Air Force took delivery of 72 Mirage IIICJ single seat radar equipped interceptors between July 4 1961 and July 22 1964. These were supplemented by five Mirage IIIBJ trainers, the three survivors of which, along with the 19 remaining Mirage IIICJs were refurbished and sold to Argentina in December 1982. After their original order for fifty Mirage 5Js was embargoed by France, the aircraft going to the Armée de l'Air as the Mirage 5F, Israeli Aircraft Industries completed fifty single seat Nesher A and ten two seat Nesher B aircraft, major airframe parts, engines and a manufacturing licence having been agreed, simply supplied quietly or otherwise acquired (ahem!). The first Nesher was delivered in May 1971 and production ended in February 1974. Four years later, the surviving thirty five Nesher As and four Nesher Bs were sold to Argentina in December 1978. A development Nesher with a General Electric J79 engine replacing the SNECMA Atar, known as the Technolog, first flew in June 1973, and led to a purely Israeli developed Mirage derivative, the Kfir. Six major versions of the single seat Kfir and three of the two seat trainer have sold to countries all over the world, several of whom still have it in service. Because many of the airframes were modified repeatedly, it is unclear exactly how many of this excellent fighter were built, estimates vary from 202 to over 220, but the generally accepted figure is 212 Kfirs in total.

Lebanon

The Lebanese Air Force (القوة الجوية اللبنانية Al Quwwat al-Jawwiya al-Lubnaniyya or LAF) placed an

order for ten single seat Mirage IIIEI interceptors and a pair of Mirage IIIBL two seat trainers to supplement their ageing Hawker Hunters. These aircraft were delivered between 1967 and 1969 but were soon grounded due to lack of funds and spares. The entire fleet languished until sold to Pakistan in 2000.

Libya

Part of the Libyan Air Force (LAF) Mirage story has already been told to explain the situation in Egypt. To recap, in 1970, 110 Mirages were ordered from France, supported by a flight training simulator and sufficient spares, engines, support equipment and weapons to last many years. The aircraft were 32 Mirage 5DE radar equipped interceptors (essentially Mirage IIIEs with the Cyrano II radar), 15 Mirage 5DD two seat combat trainers, 10 Mirage 5DR reconnaissance aircraft and 53 Mirage 5D ground attack aircraft. The first 42 of these aircraft to be delivered to Libya were supplied directly to Egypt in 1971 and 1972 and used in the October or Yom Kippur War of 1973 before being returned as Egypt's own Mirages were delivered. Some of the Libyan Mirages were involved in the border dispute with Egypt in July 1977 and the occasional skirmish along the border in the years after that, but largely the fleet were stored as a strategic reserve until a rolling programme of upgrades began in the 1980s, with aircraft being returned to France for refurbishing and re-equipping. However, the Libyan Air Force's use of the Mirages in the war in Chad in 1983 led the French to impound some of these aircraft, it is estimated that four Mirage 5DRs and several 5DEs were affected. By 2003, four LAF Squadrons were operating just 27 of the fleet, including six two seaters for training. The remainder of the airframes were in storage until 2004, when Pakistan bought fifty airframes and 150 spare engines, which shows the tremendous stock the Libyans had originally purchased. The Pakistan engineers reported that the stored aircraft were almost in brand new condition, mostly with very few flying hours for thirty year old aircraft!



One of the 32 Mirage 5DE radar equipped interceptors ordered by the Libyan Air Force. Dassault.

Pakistan

The Pakistan Air Force (پاک فوج ہوائی، Pak Fiza'ya or PAF), is today the largest operator of the Mirage in the world, operating a wide variety of types in every imaginable role. The first of these aircraft were 18 Mirage IIIEP radar equipped interceptors ordered in 1967, which were delivered between October of that year and April 1969. Three Mirage IIIDP two seat trainers followed in January 1969 as did three Mirage IIIRP reconnaissance aircraft in June. In 1970 a further two IIIDP trainers were ordered, along with 28 of a radarless ground attack and day fighter version called the Mirage 5PA. Ten more of the reconnaissance Mirage IIIRP aircraft were ordered in 1975. This was followed in 1979 by an order for two Mirage 5DPA2 two seat trainers along with 28 of a new Cyrano IV radar equipped interceptors, the Mirage 5PA2 and twelve Mirage 5PA3s equipped with the Agave radar for both ground attack and anti-shipping roles, including carrying the Exocet missile. This last batch of aircraft were all delivered by December 1982, with the 12 Mirage 5PA3 aircraft and several other aircraft being transferred to the Pakistan Navy in 1995. In the early 1990s the PAF looked to upgrade and expand the life of its Mirage fleet. To this end Pakistan purchased low hour or brand new Mirage airframes from around the world in order for these to act as a ready source of spares or as replacement refurbished aircraft. These aircraft would be upgraded to the latest standard of avionics and electronics under the title of Project ROSE (Refit Of Strike Element). In 1991, 50 ex-Australian Air Force Mirage III(O) single seat and IIID two seat airframes were purchased, 12 of which entered service with the PAF unmodified, they were in such excellent condition, 5 of which were broken up for spares. A further 33 of these were chosen for the ROSE I upgrade. They were given new glass cockpits with a HOTAS environment, new navigation, attack and self-defence avionics systems and a new radar, the FIAR Grifo M3, giving a PAF interceptor aircraft beyond visual range missile capability for the first time. In the mid-1990s, 22 Mirage IIIEEs and 2 Mirage IIIDEs were purchased from the Spanish Air Force and largely used for spares. In February 1999, this was followed by the ROSE II upgrade to 20 ex-French Air Force Mirage 5Fs and DFs. Forty of these aircraft had been purchased from France in 1996, half of them being chosen for the upgrade which added a night surface strike capability by the addition of modern avionics and a new cockpit environment compatible with night vision goggles (NVGs). The last upgrade, ROSE III, was applied in 2004 to 14 of 33 Mirage 5F ground attack fighters purchased from the French Air Force. A Forward looking Infra-Red (FLIR) and various other improved avionics, including a new navigation and attack suite, give these aircraft a much improved night strike capability. In 2007, the ROSE III aircraft entered service with 27

Squadron of the PAF. Aside from these French and Australian aircraft, Pakistan also purchased the country's remaining nine single seat Mirage IIIEP interceptors from Lebanon in 2000, which arrived in Karachi in 2002. Fifty more low-hour Mirage 5 airframes of several variants and 150 spare engines were purchased from Libya in 2004. At the moment, Pakistan has more than 150 Mirage III and 5 airframes in service in one form or another, but all of these aircraft are intended to be replaced by the PAC JF-17 Thunder by 2015 or shortly thereafter.



One of the Pakistan Air Force's Mirage 5PA3s equipped with the Agave radar and carrying an Exocet missile. Pak Fiza'ya.



The Pakistan Air Force applied the ROSE II upgrade to 20 ex-French Air Force Mirage 5Fs, such as this pair. Pak Fiza'ya.

Peru

The first Mirages acquired by the Peruvian Air Force (Fuerza Aérea del Perú or FAP) were fourteen Mirage 5P and a pair of Mirage 5DP two seaters which were purchased in 1968. A second batch of eight more Mirage 5Ps were bought in 1974 with one more 5DP added to the fleet in 1976. In 1980, ten Mirage 5P3 and two Mirage 5DP3 equipped with the Cyrano IV air to air radar were ordered, as were a pair of Mirage 5P4s fitted with the air to surface Agave radar. Some of the earlier aircraft were

upgraded to the later P3 or 4 standard and in 1982 ten of the Mirage 5Ps were purchased by Argentina to replace their losses during the Falklands War. In 1986, the Mirage 2000 began to supplement the FAP's Mirage fleet and by 2005 all of the remaining Mirage 5 airframes were in storage.



A Mirage 5P of the Peruvian Air Force. Dassault.

Saudi Arabia



Saudi Arabia ordered 32 Mirage 5SDEs. These were painted in the colours of the Royal Saudi Air Force and paid for by Saudi Arabia, but delivered Egyptian Air Force. Dassault.

South Africa

Again, South Africa's development of the Mirage, known as the Cheetah, is covered elsewhere in this magazine, but for the sake of completeness the original orders and numbers are listed here. The first batch of aircraft purchased from Dassault by South Africa were sixteen Mirage IIICZ interceptors which were ordered in 1962. These were followed by three Mirage IIIBZ two seat trainers delivered in 1964 and four Mirage IIIRZ reconnaissance aircraft in 1967. A second batch of trainers, consisting of three Mirage IIIDZ were delivered in 1969, while a second batch of seventeen Mirage IIIEZ interceptors were all delivered by 1972. Two last batches

of eleven Mirage IIID2Z trainers and four Mirage IIIR2Z reconnaissance aircraft were all powered by the Atar 9K-50 of greater thrust and were the equivalent of the Mirage 50 models as a result. Of these aircraft and other airframes acquired later 38 were converted to Cheetah Cs, 16 to Cheetah Ds, 16 to Cheetah Es and one to a Cheetah R reconnaissance aircraft. They were all replaced in South African Air Force service by the Saab Gripen, but five Cheetah Es were sold to Chile for spares in 2003, while twelve refurbished Cheetah Cs and Ds have been sold to Ecuador in 2011.



A Mirage IIIRZ reconnaissance aircraft of the South African Air Force. Dassault.

Spain

The Spanish Air Force (Ejército del Aire or SPAF) evaluated the Mirage II as early as 1962, but it was not until 1968 that an order was placed. This consisted of 24 Mirage IIIEE interceptors and six IIIDE two seat trainers, which were known in Spain as the C.11 and CE.11. Aircraft originally intended for France were diverted on the production lines to Spain, which mean the first aircraft were delivered by 1970. A plan to upgrade the fleet was cancelled in 1991 and the type was withdrawn from service in 1992. 22 Mirage IIIEEs and 2 Mirage IIIDEs were sold to Pakistan as part of their ROSE upgrade programme for the Mirage in 1995.



A Spanish Air Force Mirage IIIEE interceptor. These aircraft were eventually sold to Pakistan. Dassault.

Venezuela

The Bolivarian National Air Force of Venezuela (Aviación Militar Bolivariana Venezolana or AMBV) first ordered sixteen Mirages in 1972, with six Mirage 5V ground attack aircraft, seven Mirage IIIEV interceptors and three Mirage 5DV trainers being delivered by 1973. One additional Mirage IIIEV was delivered in 1977 to replace an aircraft lost in a accident. The availability of the more powerful Mirage 50 with the Atar 9K-50 engine prompted an order for nine Mirage 50EVs and one Mirage 50DV two seater in 1989. As part of the same order, six of the remaining Mirage IIIEVs and 5V were upgraded to the same standard, as were two of the Mirage 5DVs. These aircraft all had upgraded radars, avionics and canard foreplanes. The fleet was retired in 2007 with the arrival of the Sukhoi Su-30MKs, three Mirage 50EVs and three 50DVs were donated to Ecuador, along with four non-airworthy aircraft to act as a source of spares.



Delivered as a two-seat Mirage 5DV, it was upgraded as a Mirage 50DV for the Venezuelan Air Force. It was last seen in December 2007 and was donated to Ecuador on October 25, 2009. Aviación Militar Bolivariana Venezolana.



Refurbished as a Mirage 50DV, this aircraft was adorned with a flamboyant tail, picturing the colours of the flag of Venezuela and the

“Devils” head of Grupo 11. The aircraft was donated to Ecuador October 25, 2009. Aviación Militar Bolivariana Venezolana

Zaire

The Democratic Republic of the Congo Air Force (Force Aérienne du Congo) was called the Zaire Air Force (Force Aérienne Zairoise) between 1971 and 1997. In 1975, they were looking to acquire three Squadrons of Mirages, but budgetary restrictions limited this to just fourteen Mirage 5Ms and three Mirage 5DM two seat trainers, although only eight of the single seat aircraft were delivered, again due to the shortage of funding. The remaining three aircraft were sold to Egypt in the mid-1990s.



One of three Mirage 5DM two seat combat trainers built for the Zaire Air Force. Dassault.



A very rare photograph of a Mirage 5M of the Zaire Air Force. Dassault.

UNFINISHED PROJECTS FILE

TAILS of the GOONEY-BIRD (10)

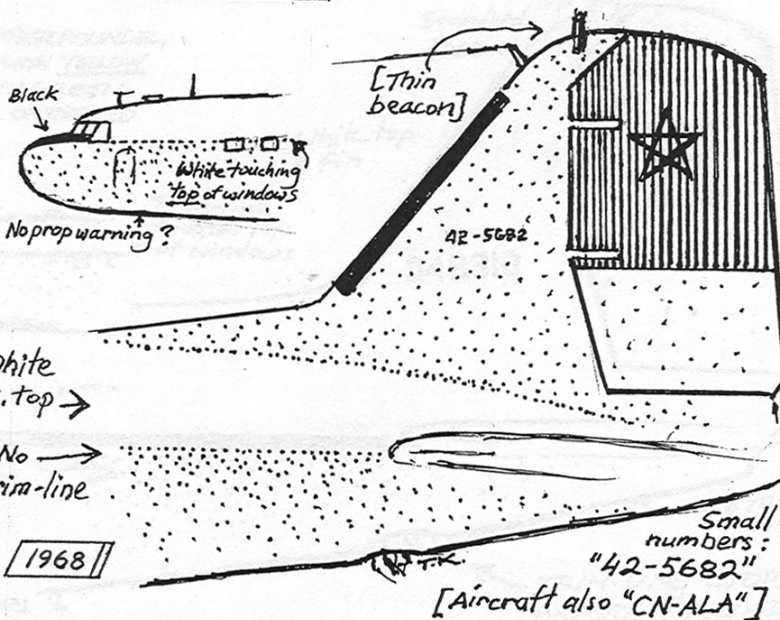
OVER AFRICA:

MOROCCO-I

"THE SEAL OF SOLOMON"



THE INTERLACED
PENTAGRAM
(green on red)
as on the coat-of-arms
and flag—& possibly
also on some air-
craft insignia.



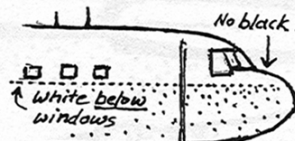
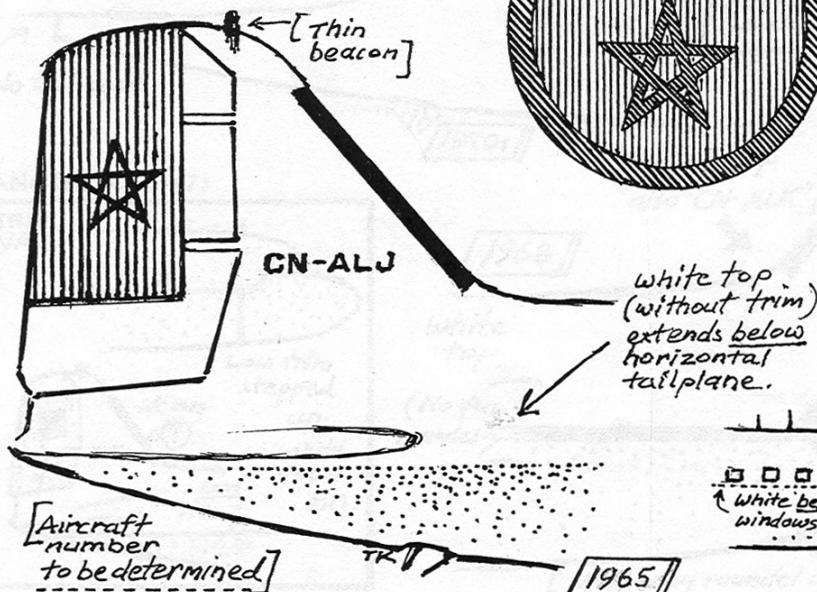
WING ROUNDELS LIKELY ON AT LEAST A FEW OF THE AIRCRAFT. WHICH STYLE?

(No fuselage roundels on these)

GREEN PENTAGRAM AND SURROUND ON RED DISC. YELLOW CROWN WITH RED DETAILS. [ALSO DEPICTED WITH VARIATIONS IN CROWN DETAIL AND WIDTH OF STAR-LINES AND BORDER.]



YELLOW PENTAGRAM WITH GREEN INSIDE, ON RED DISC WITH GREEN BORDER. YELLOW CROWN WITH GREEN INSIDE AND WHITE & RED DETAILS. TOP STAR RED WITH YELLOW OUTLINE.



[Trim-line variations on next page]

1965

T. KOPPEL/SAFO

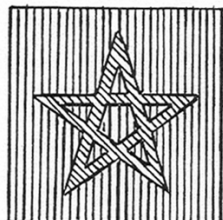
MORE-occo

UNFINISHED PROJECTS FILE

TAILS of the GOONEY-BIRD (11)

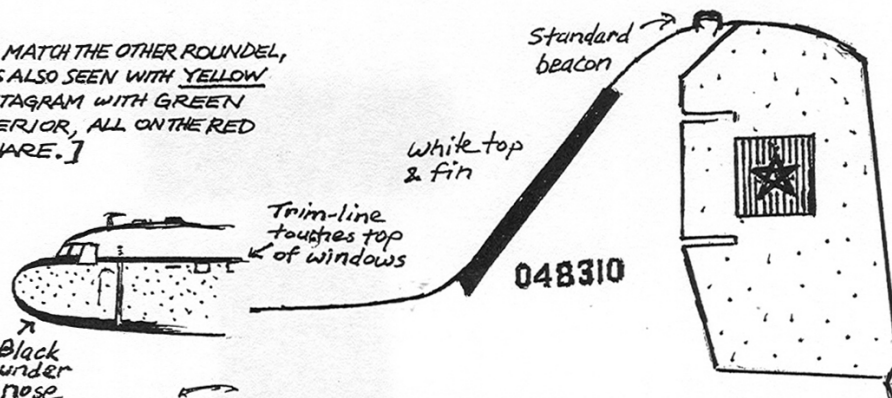
OVER AFRICA:

MOROCCO - II

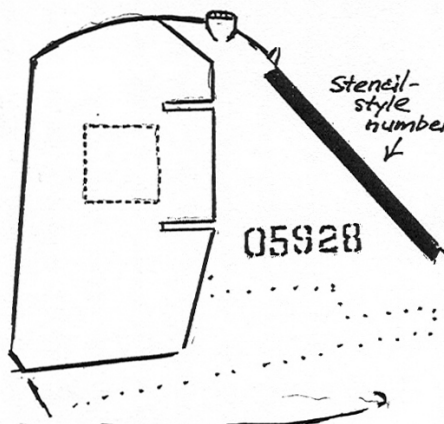


GREEN ON RED
(PENTAGRAM
NOT INTERLACED)

[TO MATCH THE OTHER ROUNDEL,
THIS ALSO SEEN WITH YELLOW
PENTAGRAM WITH GREEN
INTERIOR, ALL ON THE RED
SQUARE.]



1975



EX-A.F., WITH FLASH AND
FUSELAGE ROUNDEL
REMOVED OR PAINTED OVER.
(Tan/sand finish
overall?)

TRIM-LINE STOPS
BEFORE HORIZONTAL
TAILPLANE

TRIM WRAPS
AROUND HORIZONTAL
TAILPLANE

A DIFFERENT
WHITE-TOP C-47
ALSO SEEN WITH
FUS. ROUNDEL,
(which style?)

[RUDDER FLASH
AS ABOVE]

No tail cone

1970s

[Aircraft
also "CN-ALK"]

1968

white
top
(No fus.
roundel)

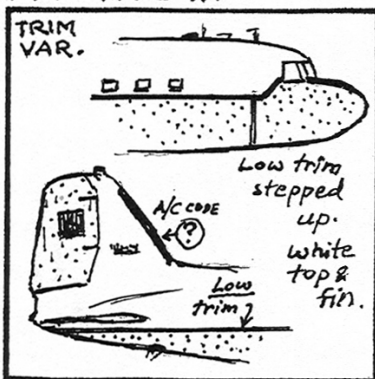
49819

Tail
cone

[Underwing roundel on this aircraft.]

T. KOPPEL / SAFO

ANOTHER C-47:



Georgia National Aircraft Insignia 1918-1921

Jozef Grego

[Editor's note: Jozef Grego is one of the many SAFCH members who contributed to John Cochrane's epic book "Military Aircraft Insignia of the World". Here he provides SAFO with the conclusions he reached regarding the first national insignia of the Georgian air force. The drawings are by the author.]

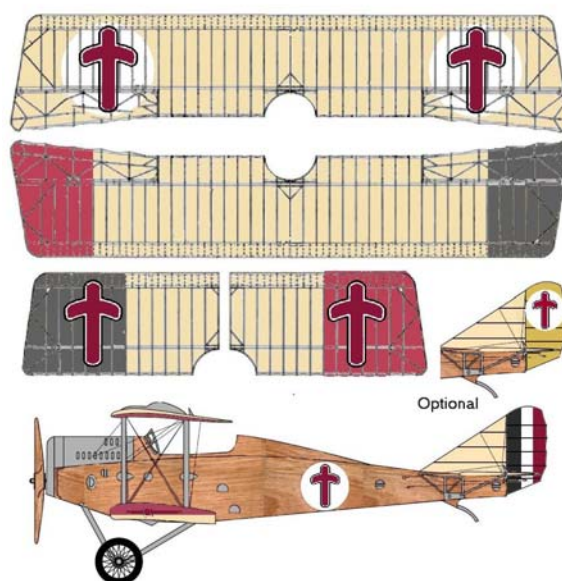
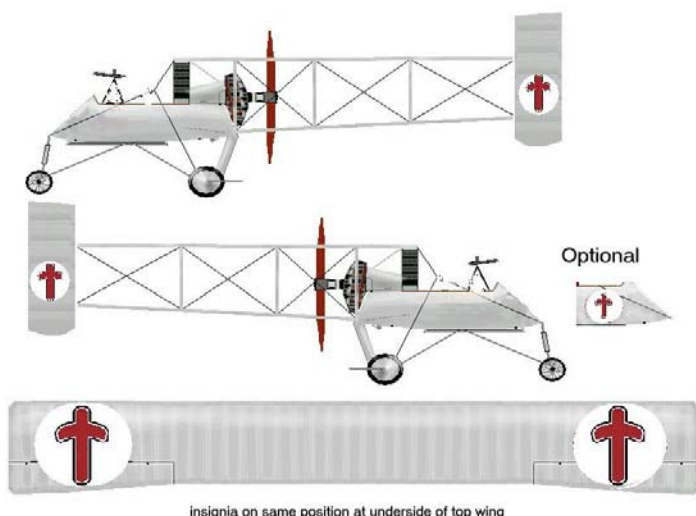
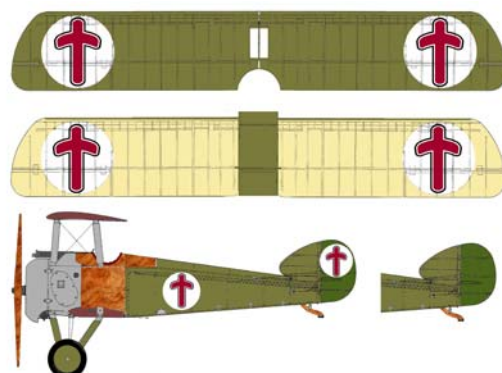
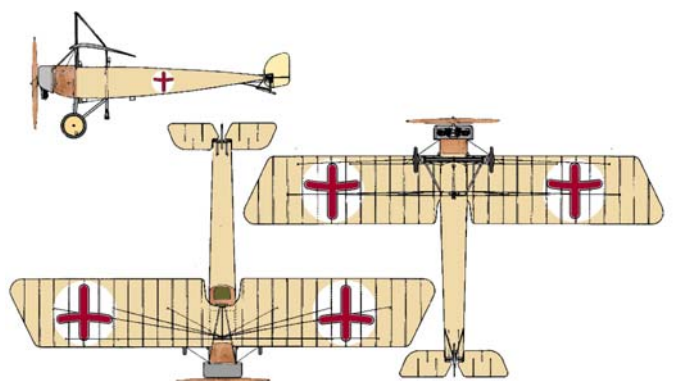
The source for the early national insignia of Georgia is <http://wp.scn.ru/en/markings/opers/exussr/134> a Russian web page. This insignia, commonly accepted by Russian historians, is based on a Bolshevik pilot's manual describing enemy identification markings. The red and maroon colors cannot be distinguished

because, in Russian, there is no difference between these two colors.

The only known Georgian airplanes from the pre-Camel era are a Morane L and, maybe, a Voisin. So it is likely, if such roundels were applied, they could have been applied directly over the Imperial Russian roundels.

The early insignia differs from the insignia used in 1920/21 in the shape of the cross and the lack of black and white outline of the later cross. I can only surmise the Russian reference is to a very early roundel used before the well-documented insignia applied to the Sopwith Camel and the Ansaldo.

Jozef Grego (SAFCH #1742), Slovakia.



Exotic Birds 3

Greg Kozak



Abkhazia L-39. The secessionist republic of Abkhazia formed an air force, equipped with aircraft including former Russian L-39s. Note that this example features the white star insignia sometimes used.



Bolivia EC-145. This Bolivian EC-145 is marked with both standard Bolivian Air Force colors and the Wiphala flag, which was recently adopted by the FAB. The Wiphala is a square emblem, commonly used as a flag, representing the native peoples of all the Andes.



Comoros C-47. This is another rare image of an aircraft from the Comoros Islands. See the Ecureuil in the last installment for reference. It is marked with the standard green/white insignia. This C-47 sports an alternative roundel, in red and white.



Guinea Bissau An-2. This An-2 from Guinea Bissau lies languishing in a hanger; note the damage to the lower-left wing. Though it wears a civilian color scheme, it carries the red-and-black air force roundel in six positions, as well as a two-digit bort number.



Haiti S-58. This white VIP S-58 from Haiti is decorated in a color scheme of the national colors of the time- red and black. The tail insignia is the black/red national flag used by the Duvalier regime from 1964-1986. The badge on the rotor housing includes the legend "Le President La Vie". I have a close-up of it, as well.



Nepal Il-14. The tail of this Il-14 from Nepal is marked with one of several variations of national markings used before standardization on the current insignia, which is notable for its unusual shape. This aircraft also wears an unknown badge on the forward fuselage.



Rwanda Alouette III. Note the unusual marking on this Alouette III from Rwanda. The registration number 9X-RGT confirms that this is its country of origin. Most aircraft from Rwanda are marked with the flag as an insignia, but this one wears a roundel. It is even more unusual in that the order of colors is reversed. The standard order is red-yellow-green from the outside, with a large yellow border.



Swaziland Alouette III. Other than images of Swazi Aravas, pictures of aircraft from that country's air force are rare. This Alouette III, SDF-003, features a very interesting metallic badge on its fuselage. It is the shield of the Swazi Air Wing, part of the Umbutfo Swaziland Defence Force (USDF). The air wing is mainly used for transporting the King, cargo, and personnel, land surveying, search and rescue, and mobilization in case of a national emergency.

-books-books-books-books-books-books-books-books-books-books-books-

The latest two monographs from Jorge Núñez, publisher and friend in Argentina, are (1) the Argentine use of the famous Sikorsky Sea King helicopter, and (2) the less well-known Argentine-designed Pampa trainer/attack jet. Both these books are in the high-quality expected from Jorge – well research, profusely illustrated with excellently-reproduced photos and colorful profile drawings, all printed on the highest-quality glossy pager. Although I've said it since reviewing the first of Jorge's monographs, I never cease to be amazed by the Kodak quality of the photos. You owe it to yourself to add a few of his monographs to your library.



Sikorsky S-61D.4 & UH-3H Sea King, by Jorge Félix Núñez Padin. Serie Aeronaval #32. 52 A-4 pages. 110 photos. Softbound. Landscape format. Spanish text. (2014) Published by Jorge Félix Núñez Padin. www.jfnpadin@yahoo.com.

The text is entirely devoted to the use of the Sea King by the Argentine navy (with a couple of pages on the use by other Latin American countries). The listing of the chapter titles should be sufficient to highlight the content.

- (1) Historia: 14 pages inc. 28 photos
- (2) Operaciones Malvinas: 6 pages inc. 12 photos
- (3) Technica: 3 pages 12 photos
- (4) Historias Individuales: 2 pages inc. 3 photos
- (5) Colores & Insignias: 3 pages inc. 6 photos
- (6) Latam Navies: Brazil & Peru (one page each w/ 2 photos each)

In addition, there are 7 pages w/ 12 color profiles; a table listing Latin Sea Kings (Argentina, Brazil, Peru, & Venezuela); 9 pages w/ full-size photos; and 5 pages w/ 4 photos each.

Highly recommended for all helicopter fanatics – and every one else who likes a good book. It is available from the SAFCH Sales service safo@redshift.com for \$20 plus p&p.



IA-63 Pampa, by Juan Carlos Cicalesí. Serie Fuerza Aérea #24. 48 A-4 pages. Softbound. Landscape format. 101 photos. Spanish text. (2014) Published by Jorge Félix Núñez Padin. www.jfnpadin@yahoo.com.

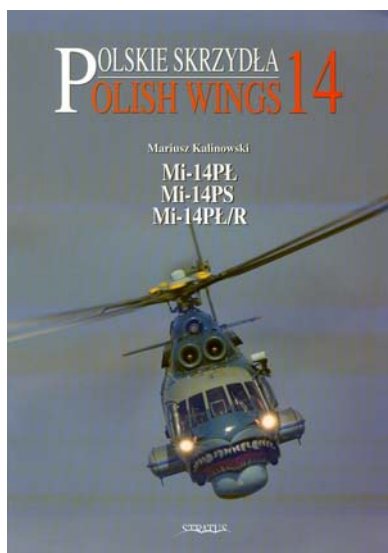
Unlike the Sea King monograph, this volume goes into great detail about the development of the Pampa. The first flight of the prototype EX-01 (msn 2001) was on May 30, 1984. Two more prototypes, EX-02 and EX-03 and two preproduction examples flew (msn 2004 & 2005) before E-801 (msn 2006) entered service with Escuadron II/Grupo 4. By the time of publication, 22 Pampa (E-801 to E-822) and one Pampa III (E-823) had entered service.

- (1) Historia: 6 pages inc. 11 photos
- (2) Technia: 16 pages inc. 26 photos
- (3) Historias Individulas: 2 pages inc. 6 photos

In addition, there are 7 pages w/ 11 profiles; 8 full-page photos; and 7 pages w/ 4 photos each.

This book is recommended for anyone interested in the story of the development of modern jet aircraft – and for the enthusiast of modern Latin American military aviation. It is available from the SAFCH Sales service safo@redshift.com for \$20 plus p&p.





Mi-14PL, Mi-14PS, Mi14PL/R: The First 30 Years in Polish Navy, by Mariusz Kalinowski. Polish Wings #14. A-4, 96 pages, 413 photos/color illustrations. Text is entirely in English. Softcover. MMPBooks: e-mail rogerw@mmpbooks.biz.

"In the mid-1970s, the Polish Navy HQ realized it urgently needed a modern ASW helicopter. The Mi-4ME helicopters used until then were no longer able to meet the requirements due to obsolescence of both the helicopter platform and the systems. Moreover, the number of ASW helicopters owned by the Polish Navy was insufficient, as only four had been acquired. It was therefore decided to purchase a new type, the Mi-14PL."

In February 1984, the Polish Navy took delivery of 12 new Mi-14: 12 ASW Mi-14PL (s/n A-1001 to A-1012) and 4 SAR Mi-14PS (s/n A-1013 to A-1016). During their service life, four Mi-14 were lost – two of each type. To bolster the SAR fleet, a used Mi-14PS (s/n 5137) was obtained in 1990.

The book begins with a 12-page section that includes: "Design History", "Mi-14 in Polish Naval Aviation Service" (including a table of the history of each individual Polish Mi-14), "Mi-14 Helicopter Camouflage History" (15 different schemes for the Polish Mi-14),

and "Emblems on Darłowo-Based Helicopters" (including a table of the emblems carried by each individual Mi-14 and 48 photos of these emblems). The book ends with 9 pages with 36 color photos of interior details.

The 71 pages in between are the real "meat" of the book. They are devoted to color photos and color profile drawings of each individual Polish Mi-14 at all stages of its life. Detailed captions provide the narrative of the helicopters service life. As an example, A-1001 is covered in 7 pages with 4 color profile drawings and 15 color photos.

I've already spent many enjoyable hours reading this fantastic book, and I've only begun to scratch the surface. I highly recommend it, not only for "rotor heads", but for anyone who enjoys a well-written and extraordinarily-illustrated book on a single aircraft type serving in a single country. You'll never get "more bang for your buck".

Available from the SAFCH Sales Service for \$25.00 plus p&p, or directly from the publisher.

Dieudonné Costes: As de Guerre et Vainqueur de l'Atlantique, by Davis Méchin & Benoît Henriët. Avions Hors-série #38. Lela Presse. 108 A4 pages (2015) 15.00 €.

Dieudonné Costes entered history on September 2, 1930 when, with his navigator Maurice Bellonte, he made the first successful aerial crossing Paris - New York on board the famous Breguet 19 'Question Mark'. Lesser known is his career as a fighter pilot during the Great War when he became an "ace of aces" on the Salonika Front. After the war, he was a pilot in various airlines and a test pilot for Breguet where he set many long-distance records. During WW2 he was a double agent, and was arrested by the FBI. He was tried for 'collusion with Germany,' but was acquitted in 1949.

This book is in the usual excellent Avion's style: French text, 245 photos, many maps, and 13 color profiles [MF XI (2), Farman F.40 & F.41, Sopwith 1A2,

Spad 7 (2), Nieuport 24 (2), and Breguet 19 (4).

Available from the SAFCH Sales Service for \$15.00 plus p&p, or directly from the publisher at www.avions-bateaux.com.



Heinkel He 274 et Junkers Ju 488: Les bombardiers stratégiques allemands développés en France durant l'occupation, by Alain Marchand and Jean-Christophe Carbonel. Airprofils #6. 74 A-4 pages softbound. € 24.00. Published by Artipresse, 119 rue Anatole France, 93170, Bagnolet, France. Email: airmagazine@rocketmail.com.

The He 274 and Ju 488 were four-engine strategic bombers that were being developed in France during the latter stages WW2. However, with the advance of the Allies, the prototypes were abandoned at the French factories where they were being built. They were completed after the war by the French and used for high-altitude research. The He 274 served as mother ship for the aerodynamic testing of the Sud-Ouest SO M1 which was carried on a strut-braced structure above the fuselage.

The He 274 is described in 60 pages of French text, 4 pages of color profile drawings showing port and starboard views of the aircraft at three stages of its life, 3 pages of 1/200-scale multi-view

drawings, 91 photos, and tables comparing the He 274 to the more well-known He 177.

The prototype Ju 488 was destroyed before it was completed (it never carried French roundels). Coverage of this aircraft, called “un avion à la Frankenstein” in the book, occupies only 13 pages including 6 photos of the a/c under construction, a table of specifications, two multi-view 1/200-scale drawings, and four color profile drawings of V401 and V403 in German markings.

Inserted into the book are two sheets, each measuring 31 inches by 22 inches, with 1/72-scale multi-view drawings of the He 274-01 and -02 on the two sides of one sheet, and Ju 488 V401 and V402 on the two sides of the other sheet. With a wingspan of 17 inches in 1/72 scale, the He 274 with the SO M1 attached would make an awesome scratch-building project.

The review copy of Airprofils #6 is available from the SAFCH Sales Service (safo@redshift.com) for \$24.00 plus p&p, or directly from the publisher.



Short SC.1: Le Premier VTOL Européen, by Jean-Christophe Carbonel. 70 A-4 pages softbound. € 24.00. Airprofils #7. Published by Artipresse, 119 rue Anatole France, 93170, Bagnolet, France. Email: airmagazine@rocketmail.com.

This is a rather peculiar book about a rather peculiar aircraft. As the subtitle explains, the Short SC-1 was the first European VTOL aircraft. This stumpy, delta-winged, bug-eyed aircraft was

powered by four dedicated lift engines and a fifth jet engine for propulsion. The SC-1 first flew in 1957 and the test program was very successful. However, the dedicated-lift-engine concept proved impracticable and the vectored-thrust engine won the day. Unusual for experimental VTOL aircraft, the SC-1 survived and is currently on display in the Science Museum.

The French text is accompanied by numerous photos and illustrations, all with extensive English captions.

The book begins with 32 pages describing the industry's response to the Ministry of Supply's request for proposals, Rolls-Royce's engineers Alan Griffith's obsession with direct-lift engines, construction of the flying-bedstead test rig, genesis of the SC-1, construction of the mockup and of the prototype, and test program. This section includes 38 photos and 35 patent and engineering drawings.

The next 16 pages are devoted to follow-on aircraft with 50 drawings and photos of proposed designs. This includes a flying platform that would take off vertically with a conventional aircraft on board, then transition to horizontal flight and accelerate to flying speed before releasing the conventional aircraft.

A 9-page appendix includes tables of specification of the SC-1, 6 photos, and a 3-view scale drawing.

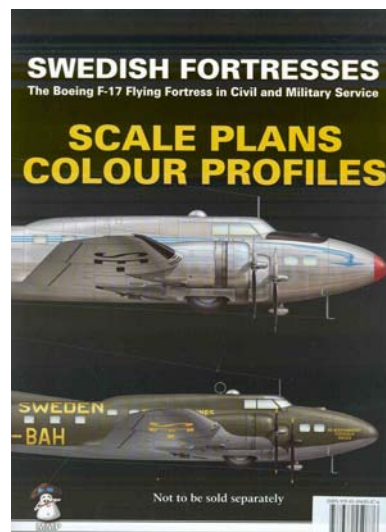
A final section includes 34 color photos of the museum aircraft, a color 4-view drawing, and 2 color profiles.

The plethora of engineering drawings makes this book look somewhat like a thesis for an MS in Aeronautical Engineering. But, don't let that fool you. The drawings are fascinating and the photos and drawings of the SC-1 are as good as you will ever get in a monograph on an experimental aircraft. Airprofils #7 is recommended to any aviation enthusiast with an inclination for technical data. In addition, wouldn't an SC-1 look great in a modeler's collection of experimental aircraft!

The review copy of is available from the SAFCH Sales Service for \$24.00 plus p&p, or directly from the publisher.

Swedish Fortresses: The Boeing F-17 Flying Fortress in Civil and Military Service: Scale Plans & Colour Profiles. [Editor's note: A mistake in MMP office resulted in my receiving for review the

portfolio of plans and colour profiles, without the book. If you're interested in the book the information is: **Swedish Fortresses: The Boeing F-17 Flying Fortress in Civil and Military Service** by Jan Forsgren. A-4 128 pages, hardcover. (2010) MMPBooks White Series #2112. \$59.00.]



The **Scale Plans & Colour Profiles** portfolio consists of 8 gigantic sheets the size of 4 A-4 pages printed on both side. One sheet contains 1/72-scale drawings of the Swedish version of the B-17. The other 7 sheets consist of color 4-view drawings of B-17s that landed in Sweden and were converted into civilian transports. Included are color profiles of the aircraft in USAAF colors, the aircraft in a variety of Swedish civil markings, and aircraft that were later transferred to Danish and French service.

The enthusiast of the small air forces will appreciate the B-17 in Danish air force service and the “what if” of a B-17 in Swedish air force modified for mine sweeping.

The transport version of the B-17 was stripped of all armament and the nose and tail were re-fashioned (see cover photo above). This is a simple conversion even for a modeler with little experience in scratch building. The Danish Air Force B-17 with its red/white roundels and extensive areas of orange would be a real eye catcher.

The Scale Plans & Colour Profiles portfolio is available from the SAFCH Sales Service for \$15.00 plus p&p, or directly from the publisher.

-decals-decals-decals-decals-decals-decals-decals-decals-decals-decals-



Mexican Air Force T-28A Trojan. 1/72-scale decals. Antarqui Decals, 757 Emory St. #106, Imperial Beach, CA 91932. \$9.00. On sale from the SAFCH Sales Service for \$4.50 plus postage.

If these decals look familiar, they should. All three have been previously released as separate decals in an earlier Antarqui series. They are presented now in a package of three decal sheets for three different Mexican T-28A Trojans.

Mexico purchases thirty N.A. T-28A's during 1960/61. The three Trojans represented here are: (1) '45' of 201 Squadron, Cozumel, Quintana. (2) 205 Squadron, 4th Group, Merida, Yucatan, and (3) '61' of 207 Squadron, 1st Air Group, Ixtepec, Oaxaca.

Two of the aircraft carry colorful identification bands around the fuselage, wings, and vertical tail. The color of these bands is yellow and orange. The third aircraft is plainer with the green band only around the fuselage. All three

aircraft are 'overall light grey' and all have colorful unit insignia.

Each decal sheet provides six national insignia, tail stripes, unit insignia, aircraft numbers, colored bands, antiglare panel, and black exhaust panels – sufficient to model all three Mexican Trojans.

If you are not interest in modeling three Mexican T-28, the individual decal sheets are available for a limited time from the SAFCH Sales Service for the sales price of \$1.50 each plus postage.



French Aichi E13A1 Jake, Aeronavale, French Indochina ca 1947-48.



Aichi E13A1 Jake, Royal Thai Navy, Sea Squadron, RNAB Sattahip, ca 1943.

Two 1/72-scale decals. Antarqui Decals, 757 Emory St. #106, Imperial Beach, CA 91932. \$6.00.

Modelers of the aircraft of the small countries who have squirreled away kits of Japanese aircraft in the hope finding decals to make the kits in non-Japanese markings will jump at the chance to use this decal set to add a model of the Aichi E13A1 Jake without meatballs to their collection.

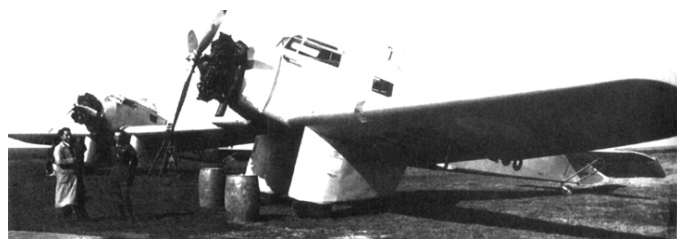
This set contains two decal sheets: One for a Jake of the French Aeronavale in French Indochina ca. 1947/48, and the other for a Jake of the Royal Thai Air Force.

The Aeronavale Aichi has its upper surfaces in 'medium grey' and under surfaces in 'light grey'. French roundels are carried in six positions, and the tricolor rudder stripes carry the black anchor. The unit code '8S13' is carried on both sides of the fuselage.

The Thai Aichi has upper surfaces in 'forest green' and under surfaces in 'light grey'. The Royal Thai roundel in the national colors (red/white/blue/white/red from the inside) is carried in four positions, and the horizontal stripes (with the colors in the same order) are carried on the rudder. A unit insignia, consisting of a black anchor within a yellow disc, is on each side of the fuselage. The individual aircraft number '34' is on both sides of the vertical stabilizer. The decal sheet provides four national roundels, rudder stripes, unit insignia, aircraft numbers, and white bordered red propeller warning stripes for the floats.

This set is available from the SAFCH Sales Service for \$6.00 plus postage.

More Bombi Photos



Two Bombis during a deployment,



The prototype with the new and definitive tail

[Editor's note: Lately, there seems to be a lot of literary interest in the life of John C. Robinson. As a follow up to Ted Koppel's review of the book, *The Man Called Brown Condor*, by Thomas Simmons (SAFO #152), Ted sent the following "details and discrepancies" between Simmons book and *Father of the Tuskegee Airmen*, by Phillip Thomas Tucker. Also noted is *The Challengers Aero Club*, by Severo Perez.]

Some differences between the Tucker and Simmons book are minor (Ethiopian recruiter of JCR is Selassie's cousin in one, nephew in other; Staggerwing is "B17R" vs. "Beech 17L"), but others are quite major. With greater detail in Tucker, there are about 150 pp. dealing with Ethiopia in '30s-'40s, incl. use of French-piloted planes against warlord in 1930.

Robinson, recovering from a broken arm, arrived in Ethiopia in May '35 at the same time as Hubert Julian's return, but they didn't meet until Aug. 8, when Julian was banished. Aircraft listing before that time rather vague, 11 or 12 on hand, with only a couple operational. JCR, being master mechanic, helped put more into service, as he would continue doing later. The Beechcraft he ordered arrived in summer '35, supposedly the fourth operational a/c at that point. Tucker's claim of the July arrival of three Junkers Ju-52 tri-motor transports from Nazi Germany, with arms and supplies and German crews, is a puzzler. He appears to have confused the Junkers with the Fokker tri-motor, but then both a/c identities later used in same sentence. Never a mention of W.33, just "Ju-52 tri-motors" throughout (and this from a USAF historian)! By mid-August, JCR was promoted, head of IEAF, and the Emperor's pilot. The German team leader, Ludwig Weber, would also pilot Selassie. Other foreign pilots, perhaps a dozen, mostly European, are also mentioned.

With more trainers repaired, JCR was desperately seeking help from any source. Selassie authorized JCR to recruit (at first) six African-American pilots, most from Robinson's own Challenger Air Pilots Assoc. in Chicago, but the six American aircraft he ordered were embargoed in the US. He then, by mid-

Nov., had ordered six planes from England. Complications arose when condition imposed that the British aircraft only come with British pilots, mechanics, and supervision, something Selassie reportedly very leery of. In any case, loan payment was delayed, and once the second Italo-Ethiopian war actually started, some of JCR's American pilots changed their mind and the other were not permitted to leave the US due to the Neutrality Act.

By that time at least four Potez 25s (and possibly a Fokker monoplane) were armed with machine guns retrieved from the army. Mention is made of Potez No. 3 named "Nesre [Prince] Makonnen." By intensive scrounging, often by clandestine means, JCR eventually had two dozen aircraft in Ethiopia. Only three reportedly survived the war. A partial listing of IEAF a/c includes six Potez 25s, one Breda sportsplane, one Beechcraft, one Heinkel, two de Havillands, one Weber/Meindell van Nes, three Junkers, and three Fokkers. At least one of the last being converted into an ambulance and named "Abba Dagnew."

On October 3, '35, JCR was caught in the Italian bombing raids on Adowa, the site of the Italy's defeat in the first Abyssinian War. The next day, he was able to take off in his hidden Potez, but was intercepted by two Italian fighters. Tucker describes the exchange of gunfire, both sides being hit, before JCR was able to get up into cloud cover to escape the faster fighters and then diving down to maneuver at low level among the canyons, returning to Addis Ababa in his damaged plane. As the author skips around a bit, it is not clear if this first encounter was when JCR was wounded in the lower arm and hand, or if that occurred later. In the second week of December, on a delivery flight with medical supplies, Robinson saw an unescorted Caproni bomber. He attacked twice, damaging the bomber before Italian fighters finally showed up. He out-maneuvered them with the same low-level evasive tactics amid the rugged terrain to get away. Book states that JCR was involved in twelve aerial battles, once even encountering Mussolini's bomber-squadron-leader son, Vittorio, and being wounded three times in the

war. (He also reportedly survived three gas attacks on the ground.)

In mid-March 1936, with the Emperor's having moved his HQ to mountainous Dessie, Count von Rosen with his Red Cross Junkers and Robinson with "one of his most swift aircraft" landed there. Despite immediate camouflaging attempts, both aircraft were destroyed by Italian bombers (as well as being gassed), forcing a 400-mile trek back to Addis Ababa. The plan to convert some Ethiopian planes into improvised bombers to destroy bridges and mountain passes couldn't be carried out due to the speed of the Italian advance into the center of the country. The IEAF planes were being destroyed by air raids as JCR, not fully recovered, got back to the capital on April 30 and left by train that evening, heading for the French port-city of Djibouti. (The Simmons book claimed that Robinson flew out the Staggerwing on May 4.) half-Ethiopian Lt. Mischa Babitchev was able to fly out on May 1 (what aircraft?); and on May 3, Ludwig Weber and three other "armed Germans" prepared to leave in the remaining Junkers, when Weber was killed. Tucker states that French ace Drouillet, illegally leaving Paris in a brand-new \$15,000 American plane, was late in reaching Ethiopia. (Was this the rumored second Staggerwing, and did this tie in with the May 4th date mentioned above?) The original Staggerwing was captured by the Italians at Addis Ababa on May 5, along with a slightly damaged Potez named "Bird of the Crown Prince."

The book then goes on to JCR in US, conflicts with Tuskegee Institute, his founding his own air college, start of USAAC Civilian Pilot Training Program, becoming instructor at AAC Technical Schools & AAF Training Command, and lecturing on Italian aerial tactics at bases around the country. Tucker claims that JCR wanted to command the all-black 99th Pursuit, later Fighter, Sqdn., based on his being the only black pilot there with combat experience in a variety of a/c as well as leadership abilities, but Army only offered him a rank of Second Lieutenant.

With the 1943 liberation of Ethiopia by the British (& Ethiopians), JCR was contacted by Selassie to help rebuild the

air force with a team of African-American pilots and mechanics, reallocated from the US training system as part of the Lend-Lease Program. Robinson's team, later nicknamed "The Brood," departed from New Orleans by ship. After arriving in Cape Town, South Africa, they made the overland trip north by rail and truck, arriving in Addis Ababa in April, 1944. (Simmons claimed they'd flown in a Dakota from England to Egypt. Could that flight, if true, more likely have happened after WW II while Robinson was getting such planes for EAL? See below.) Also as part of the Lend-Lease, two surplus USAAC Cessna twin-engine trainers arrived in Ethiopia in Nov., the first new aircraft for the Ethiopia, while JCR once more sought to purchase an air force. (Simmons reports only one Cessna UC-78.) The interim head of IEAF, Mischa Babitchev, was appointed ambassador to Moscow, so that Col. Robinson could resume his position as commander. In Dec. the Ethiopian A.F. Training Program was started by JCR with the establishment of the Duke of Harar Aviation School. By the end of 1946, when JCR's "Brood" left, it had trained over 80 native aviation cadets. (The Duke of Harar was Selassie's son, Prince Makonnen, for whom JCR later became the personal pilot, for years afterward, while continuing to run the school.)

In 1947, JCR created East African Airlines (Sultan Airway, Ltd.) which was later renamed the government-owned Ethiopian Air Lines (EAL). JCR was the founder, manager, trainer, and pilot, flying with Ethiopian pilots its "former RAF" DC-3s. EAL later went international in a partnership with TWA.

The "von Rosen incident" occurred after the Swede had refused to fly as co-pilot in a C-47 JCR was delivering to the IEAF. Robinson had to fly it by himself. Later, in a confrontation about Major von Rosen's insubordination and racist insults, the fight led to von Rosen's broken jaw and, eventually, Robinson's resignation as head of IEAF. Obviously, he still continued with EAL with the Aviation School and advisor at the War Department.

The crash on March 13, 1954 of the "training plane" returning to Addis Ababa from a medical mission killed the co-pilot, the Italian engineer and Robinson's flying-student and friend, Bianchi Bruno. Robinson apparently was able to crawl

out, badly burned. He finally died on March 27, after a last hospital visit from the Emperor. In an Imperial Guard ceremony, he was buried in Tulele Cemetery.

Whew... so there you have quite a few extra details and several bigger discrepancies. Don't know if you'd like to use any of this in a review of the book... It's certainly been a dizzying ride!

Oh, yes, an appendix in the book lists the names of 52 Ethiopian "Aviation Cadets trained by John Robinson's Team."

Ted Koppel (#118), USA.

"With reference to the letter from Denys Voaden regarding the VVS-ROA, there is an interesting article in *Under the Red Star* by Carl-Fredrik Geust Appendix 3 on this air arm, unfortunately without any illustrations. There is also an article on the Baltic air arms during WW2 in the same book, Appendix 2. Another book with articles on the VVS-ROA and Baltic air arms in WW2 is *In the Skies of Europe* by Hans Werner Neulen with some illustrations.

"There is a drawing of the VVS-ROA insignia on a Bf 109 in *Military Aircraft Insignia of the World*, 1st edition, by John Cochrane and Stuart Elliott, under Russia, but in the 2nd edition they state the markings have yet to be confirmed.

"Regarding *French Flying Boats of WW2* by Gerard Bousquet, on page 161 note 3, he states that there will be another book on French floatplanes in the series. I contacted the publishers and was informed in November 2013 that a second volume was planned, was being worked on and may be published in late 2014, but of course nothing yet."

Michael Elsey (#1747), UK.

"Ralph O'Neill was mentioned in the article 'Mexico - May 1920' by Santiago A Flores in SAFO #152. *Over the Front* by Norman Franks and Frank Bailey, ISBN 0948817542 (1992), says that O'Neill was born in San Francisco, not Mexico and that he had five World War One victories, all of which were shared, not six confirmed victories and five probables.

Gerard Terry (#1728), UK.



"In regard to the recent discussions about the Russian Army of Liberation (ROA), a 1993 decal sheet from AeroMaster included decals for a ROA Bf-109G-10."

Dennis Kuykendall (#1046), USA.

"As ever congratulations on a varied selection of items within #152, in particular Santiago A Flores article 'Mexico: May 1920' the whole of which was new to me. The combination of new photos and informative text made for a splendid exposition of early Mexican aviation history. As I have said before, all we know of this period is churned out by Hollywood in it's own peculiarly historically inaccurate way. Actually Santiago's article would make a great synopsis for a movie, until of course, Hollywood rewrote it!

"Thanks to Ted Koppel for his summary of the remarkable life of John Charles Robinson and also his efforts to bring to life some of the aircraft involved in his career in Ethiopia."

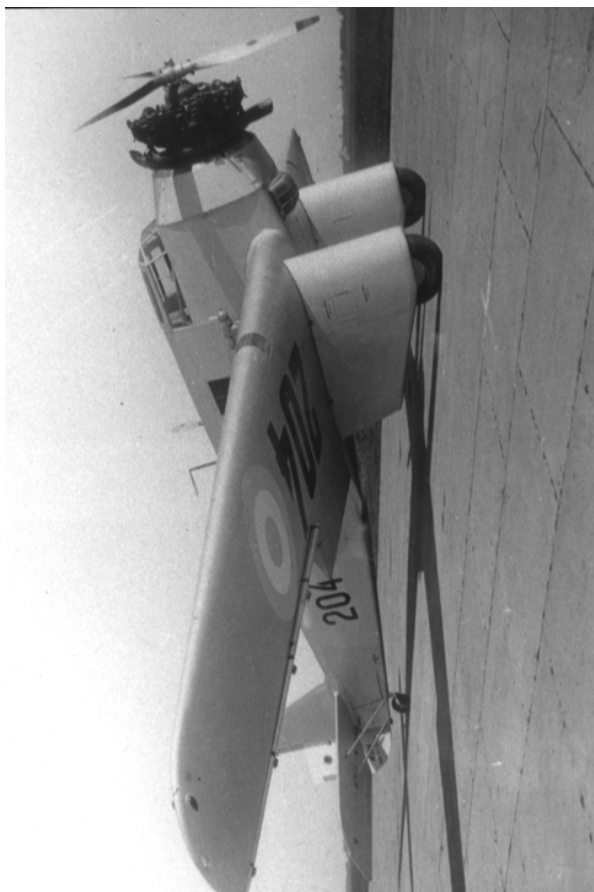
Malcolm Barratt (#1716), UK.

"I am looking for any information about WWII helicopter air combat events. I already have the following events:

"The Russian's claimed shooting down German helos: 'April-May, 1945, Russian fighters shoot down several German Flettner Fl-282 Kolibris used as artillery spotters in the defense of Berlin.' (Heinz J. Nowarra, *German Helicopters 1928 - 1945*, Schiffer 1990, p. 28).

"1945 Russian fighter planes shot down a German helicopter between Peterswaldau - now Pieszyce, Poland, and Peiskersdorf (now Piskorzow, Poland). The pilot was saved, by the police from Peterswaldau and both the pilot and the helicopter wreckage were sent to the air base at Schweidnitz (now Swidnica, Poland). Steve Coates *Helicopters of the Third Reich*.

C. Scott Barnes, dahbu@sfcu.org, 1399 South 1270 East, Spanish Fork, UT 84660, USA.



The 204 after modification with the removal of the turret. The ram generator of the Telefunken radio is clearly visible above the wing



Side view of an Ae.M.B.1



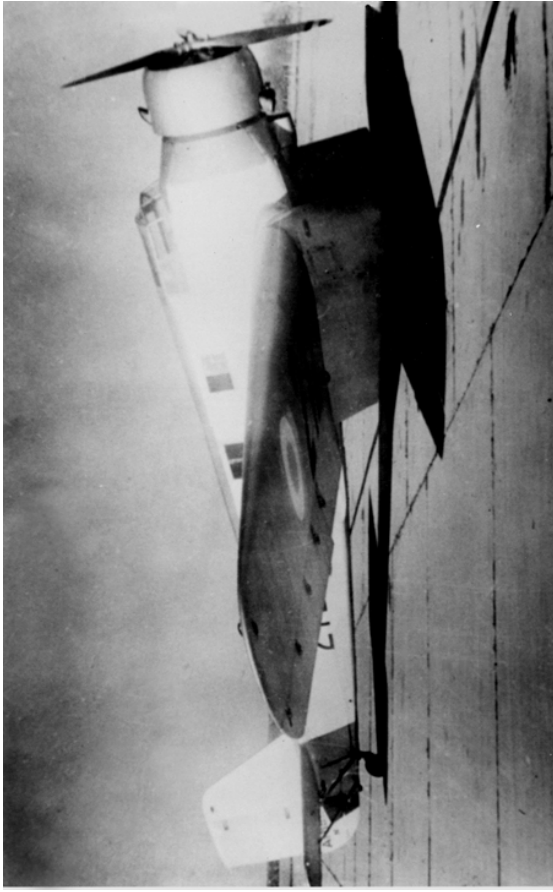
Side view of an Ae.M.B.1



O-203 close to the end of its career



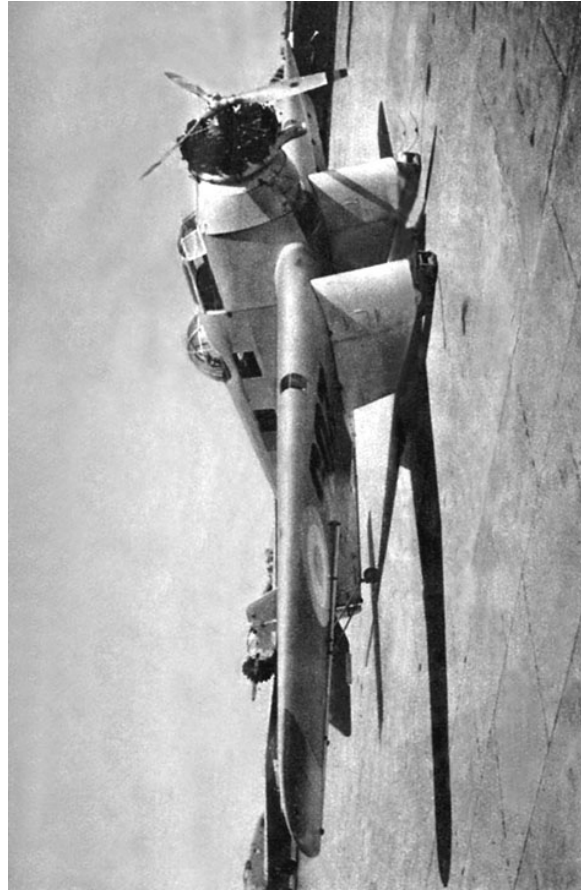
A Bombi during a civil aviation exhibition



The 212 had a lower top and probably it was built as transport, without the turret being ever installed



An Ae.M.B.1



The 205 during exercises, with wingtips painted in red and a red bar on the fuselage. This plane had a retractable turret